a W. R. C. Smith publication

Textile Industries

Formerly "COTTON"

DECEMBER, 1955

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As the year draws to its close, we give thanks for our many blessings . . . that we live in a free America . . . that we have the ability and determination to protect our heritage . . . and that the clouds of fear which hang over the world are breaking, even if ever so slightly. To our many friends in the textile field we give our personal thanks for their continued loyalty over the years. May the times ahead bring peace and prosperity to all.

John Cocker III

Cocker Machine & Foundry Co.

Save this issue! It contains your 1955 index (opposite page 232)

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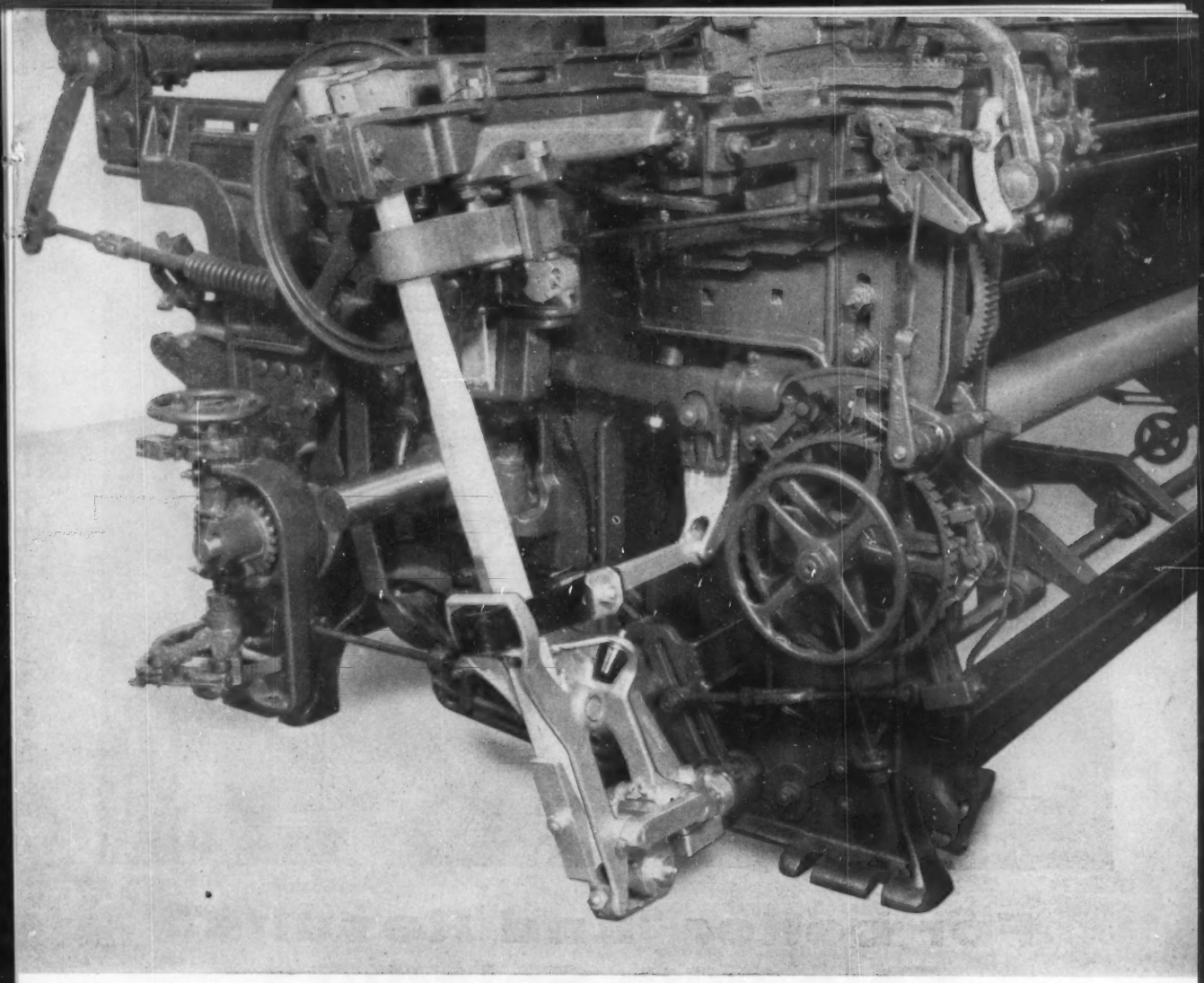

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Extensive mill trials prove the Draper Linkage Parallel Assembly results in a more uniform, controlled picking action. This parallel assembly eliminates "jump" and "play" in the picker stick . . . improves overall loom operation and reduces wear on pick motion and parallel parts.

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For complete details on this *cost* and *labor saving mechanism*, contact your nearest Draper representative or write:

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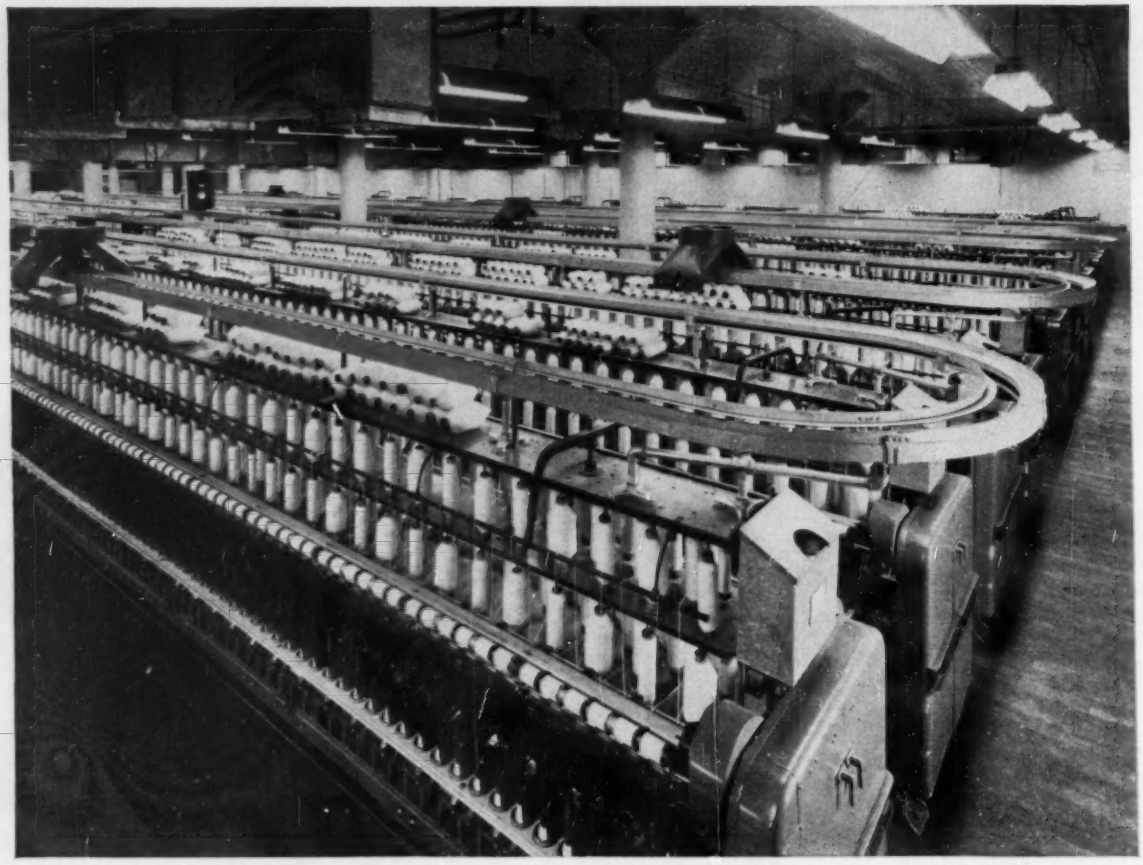

For better "End Results" Spin with Spindura

WHEN spindles are lubricated with *Texaco Spindura Oil,* the results are: fewer ends down . . . cleaner, smoother yarn . . . increased production . . . low maintenance costs.

Texaco Spindura Oil has outstanding oxidation resistance. It does not thicken or form gum. This means less vibration, hunting and lagging . . . no "drag." Spindles can carry heavy packages at full speed, less power consumption. Yarn is cleaner, too, because *Texaco Spindura Oil* does not atomize or fog.

There is a complete line of *Texaco Spindura Oils* to meet the requirements of all spinning, throwing or twisting spindles.

For anti-friction and sleeve-type bearings, cams and gears—use *Texaco Multifak,* the multi-purpose grease that simplifies lubrication. And for fibre conditioning, *Texaco Texspray Compound* assures stronger, more uniform yarn.

You can reduce operating costs and add to your profits through effective lubrication. To get complete information from a Texaco Lubrication Engineer, just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States. Or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

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FOR THE TEXTILE INDUSTRY

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ABC NBP BPA

Textile Industries

Formerly "COTTON"

Vol. 119, No. 12
December, 1955

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Shorts and Remnants

By J. C. C.

► And then comes December—named after the Latin word "decem" meaning ten, and so it's the twelfth month of the year. Since last month old S & R tried to read up on why the calendar gets all mixed up on the months, and it seems something of a confusion between the Julian calendar and the Gregorian calendar. If you care to go into it deeper than that, go ahead. Write us about it. We will still stick to the Brown & Bigelow calendar with Marilyn Monroe. Anyway, December has been the 12th month for 2,000 years, give or take a year or two, and Christmas has been

around almost that long, in case you have forgotten.

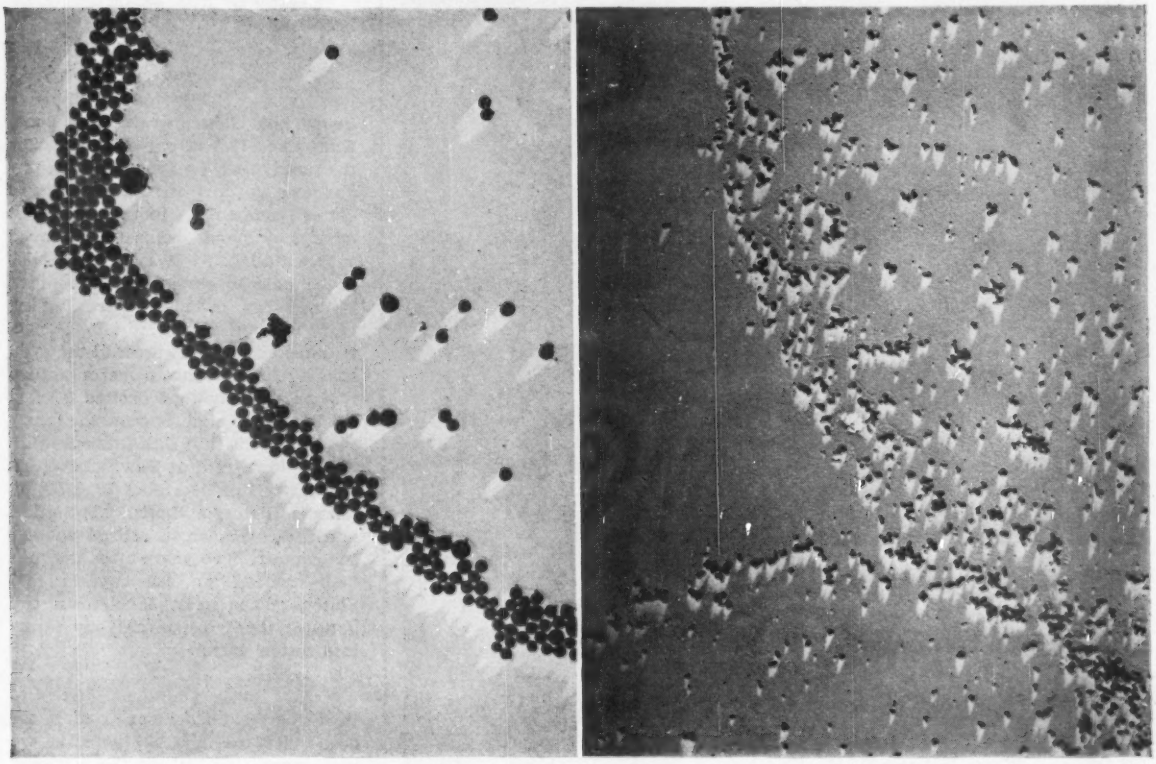
► Don't send old S & R any expensive gifts for Christmas. Just renew your subscription or your ad contract, whichever end you are on, and get your neighbor to do the same.

► About the best Christmas Santa can bring to textiles is a continuation of the present good business, and some folks indicate that's just what is in store.

► **Spencer Love,** board chairman of

Burlington Industries, reports that "For a year now the industry in the

ELECTRON PHOTOMICROGRAPHS (10,000X) compare normal size latex particles (left) approximately 0.25 micron (2500Å) in diameter, with those of new, small-particle size CHEMIGUM LATEX, approximately 0.05 micron (500Å) in diameter.



Here's what you'll gain

with new, small particle size CHEMIGUM LATEX

IF you're now using latex in sizes, saturants, finishes, dye vehicles or adhesives, here are the advantages of changing to new, small-particle size CHEMIGUM LATEX: Better binding action. Improved wetting and penetration. Easier handling. Greater resistance to discoloration. Lower costs.

If you are not using latex in any of the many possible ways, here are some of the product improvements you can effect with new CHEMIGUM LATEX: Better feel and drape. Greater body. Higher strength and dimensional stability. Increased resistance to washing, wearing, wrinkling, raveling, tearing, snagging and sliding.

The new CHEMIGUM LATEX is a nitrile rubber dispersion exhibiting the following properties: Medium or high acrylonitrile content. A particle-size about one-fifth that of regular latex—about 20% smaller than other small-particle latices. Low specific gravity. Very high mechanical stability. Low viscosity and surface tension. Ready precipitation by ions.

Details on how the new, small particle-size CHEMIGUM LATEX can help your product are yours by writing:

Goodyear, Chemical Division, Akron 16, Ohio

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Chemigum, Pliobond, Plioflex, Pliolite, Plio-Tuf, Pliovic —T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

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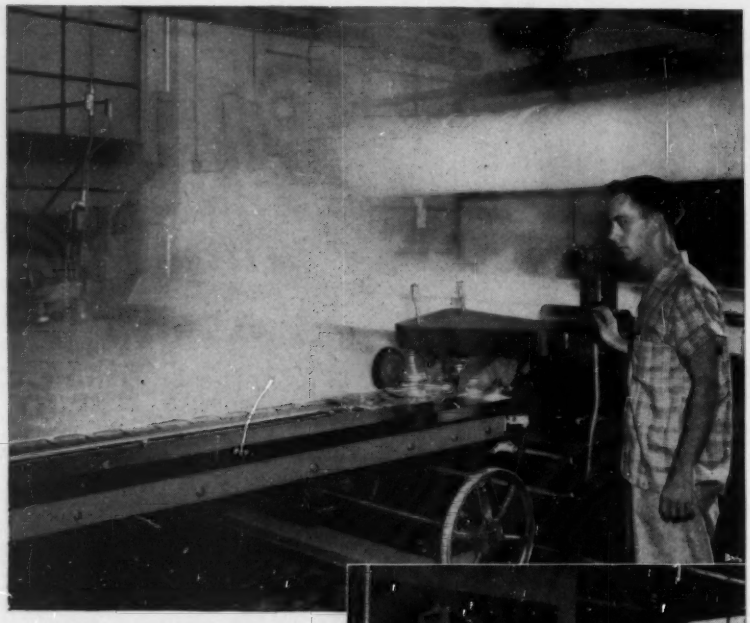


Askania Edge Position Control Increases Production 100%— Reduces Man Hours 25%

PIN-TENTERING FRAMES RUN AT FULL SPEED AT KINGSBORO MILLS, INC.

Kingsboro Mills, Inc., Daisy, Tennessee, manufacturers of "Rogers Lingerie" installed three Askania Edge Position Controls to operate their pin-tentering frames. Here are some of the results they report:

Doubles production! James C. Childress, dye room superintendent, reports, "Under the old system we were running 30 yds. per minute. Now with the Askania equipment we are running 60 yds. per minute—wide open. We can't run the frame any faster."

Reduces man hours 25%! Attaching fabric to the pins on the pin-tentering frame—a job that Askania now does automatically—was so tedious that employees could stand only a "couple of hours" of it. Askania does the job effortlessly—does a neater, more even job than could ever be done by hand—controls to 1/32".

No maintenance costs! No down time! Gregg Quick, Vice President of Kingsboro Mills adds, "We have three Askania units in operation; one, a year and a half old, the second installed in December, 1954, and the third in July of this year. Our men installed all three units without assistance and *we have had no maintenance at all to date.* Moisture used to short out our electronic controls and cause frequent work stoppages; there is nothing to short out on this hydraulic equipment—and it's much faster than motor driven worms."

If you have a cloth guiding problem it will pay you to investigate the advantages of Askania controls—write for details today.

ASKANIA REGULATOR COMPANY

260 E. Ontario Street, Chicago 11, Illinois

A SUBSIDIARY OF GENERAL PRECISION EQUIPMENT CORPORATION

Shorts and Remnants

South has been operating at something like 133% of two shift capacity; the trend of wages and take-home pay has been upward, and the earnings of better companies, though still not what they should be, have improved substantially . . . It is pleasant also to be able to state that the upturn gives every promise of continuing and strengthening. . . . " Amen, Brother Love, and we recall that you said a year ago that a major upturn had started. Don't get excited too fast though. December is also the anniversary of the first U.S.A. textile mill. A 72-spindle mill at Pawtucket, R. I. was started on December 20, 1790, by Samuel Slater, a British apprentice, and Moses Brown, a retired Quaker sea captain. Two years after the mill had started, the sea captain told Slater, "Thee must shut down thy gates or thee will spin all my farms into cotton yarn."

► So that brings us back to December and Christmas and if we do as well the next 165 years as we have since then, it will be a merry Xmas indeed, and if you don't believe it, stick around and see.

► Since we are talking of years in the business, how about a hand for Crane Co. who sent us the 50th anniversary copy of "Valve World" celebrating the 100th anniversary of Crane Co. Two pages of the publication are devoted to "Textiles—For Industry, Beauty and Modesty." It says " . . . Today the figure [textile goods] is approaching the $2 billion mark, and for 1970 the analysts predict a volume 70% greater than present textile production. . . . "

► **Eugene R. Gardner** of Warner & Swasey Company gets into the anniversary act with a 75th birthday book also calling attention to his company's textile machinery; and we are glad to have you with us, Mr. Gardner, and may you be around another 75 years with more textile machinery.

► Old S & R gets the darndest things. Bakelite Co. sends a package of disposable diapers by Blessings, Inc. (N. Y.). Seems they have a coating of Bakelite something or other over non-woven fabric. Now why do you reckon Bakelite figured a good textile book would feature something

MILLS OPERATING AUTOCOPSERS

SAVE 9 WAYS

DIRECT LABOR COSTS

AUTOCOPSER OTHER

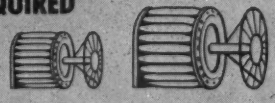
MAINTENANCE COSTS

AUTOCOPSER OTHER

FLOOR SPACE REQUIRED

AUTOCOPSER OTHER

LOOM BATTERY HANDS REQUIRED

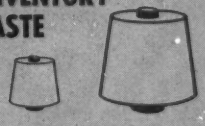


AUTOCOPSER OTHER

QUILL INVENTORY QUILL REPLACEMENT

AUTOCOPSER OTHER

YARN INVENTORY AND WASTE

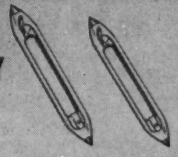


AUTOCOPSER OTHER

POWER USE

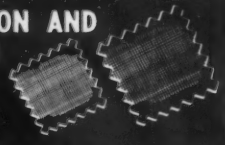
AUTOCOPSER OTHER

WEAVING EFFICIENCY



AUTOCOPSER OTHER

INSPECTION AND GRADING COSTS



AUTOCOPSER OTHER

Schlafhorst

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AUTOCOPSER

First Name in Automatic Quillers the World Over

Sold and Serviced By

THE TERRELL MACHINE COMPANY, INC., 3000 S. BLVD., CHARLOTTE, N. C.

Shorts and Remnants

that was non-woven plus Bakelite to replace baby pants? They are scented, too! Besides, our young one (and only) is almost eight and even if she needs them now and then she wouldn't be caught dead in a Blessings, Inc., diaper, but we will give you the picture that went with it—see, it's probably a boy child anyway:

► Then, of course, there is the usual stuff from all over, including an item from Russia about fabrics made from a synthetic fiber containing up to 20% of whale meat proteins. The item says they "look and feel like wool" but it all sounds fishy to us.

► We don't know why folks should get excited about a loom without a shuttle. What's wrong with a shuttle? A little item several months ago from Hungary got a bunch of inquiries. We will bet that Draper beats them out on this, but another shuttleless loom was introduced to the textile trade in Italy recently and we still do not know by whom.

► **J. P. Cleaveland,** Supt. Elmrose Div. Callaway Mills Co., LaGrange, Ga., says he notes the Hungarian development with "tongue in cheek." So here's another.

► **C. W. Sober** of Cha-Dor Farms, Gregory, Mich., wants upholstery supplies. Anybody want to write him?

► **Ed Ferguson** of Industrial Supply Co., Clinton, S. C., says he appreciates the map showing Clinton as the hub of textile activity, but in all due fairness the S. C. Development Corp. should get credit for developing this data.

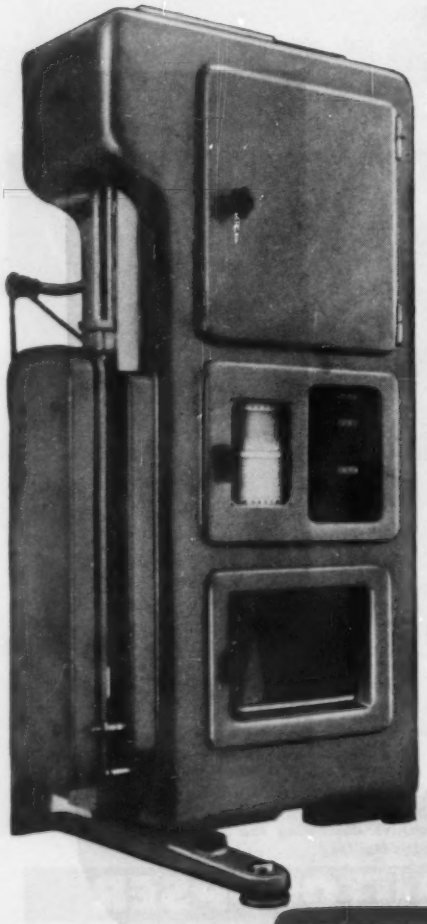
► A good advertiser writes that "the feature article given us by your magazine . . . certainly helped us regain lost volume in the textile field. . . . " Seems the firm has installed the featured system in 45 mills and is working a second shift—so "never underestimate the power of T.I."

► The following photograph comes in from Cranston Print Works Co. Seems that they were the only mill exhibitor at the recent AATCC Con-

vention in Atlantic City. Left to right are: **Godfrey Rockefeller,** Pres.; **Peter Blair,** Adv. Mgr.; **Edw. Lawrence,** Res. Dir.; **J. Harold May,** Mgr.; but look down in the lower right corner—that's TEXTILE INDUSTRIES on the table in the next booth and the

USTER AUTOMATIC YARN STRENGTH TESTER

makes single strand tests practical



NOW AT 10% of FORMER COST

THE NEW USTER AUTOMATIC YARN STRENGTH TESTER

- Is completely automatic in operation
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- Records periodic breaking cycles, elongation, frequency distribution
- Requires no reeling
- Reduces waste for cotton, wool, filament, staple fiber yarns
- Up to 2,000 tests per day

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and get the full story

TESTING EQUIPMENT — USTER — PREPARATION MACHINERY

OPEN THESE DOORS TO SPINNING PROFITS

Shown below is head end of Roberts Model 55R High Draft Spinning Frame.

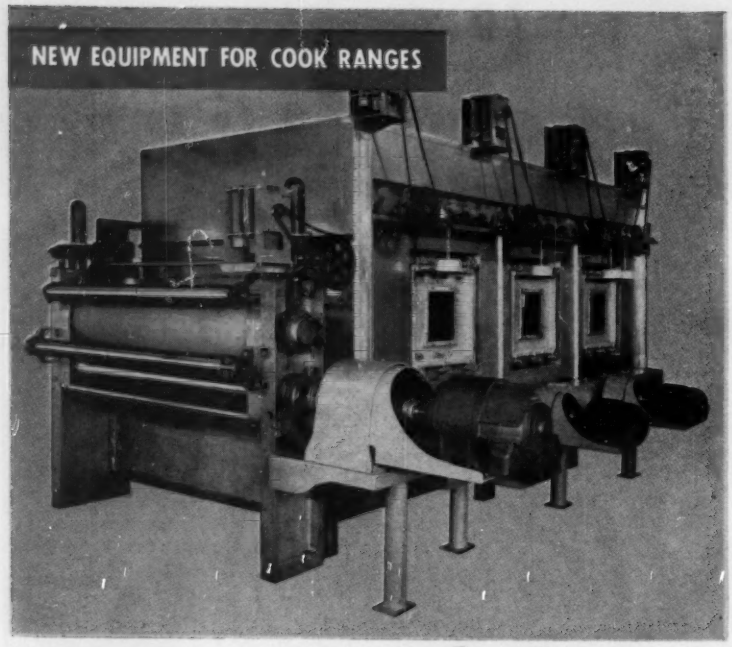
AVAILABLE IN THE FOLLOWING FORMS:

- *Partial or complete changeovers on mill's existing frames.*
- *Completely modernized Model 55R Roberts High Draft Spinning in 3", 3¼", 3½" or 4" gauge.*
- *All-new Model 56 Roberts High Draft Spinning Frames.*

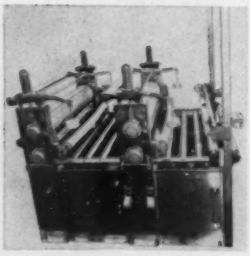
- **LARGER ROVING PACKAGES IN CREELS**
- **LONGER LIFTS ON BOBBINS**
- **LARGER RING SIZES**
- **HIGHER DRAFTS**
- **HIGHER FRONT ROLL SPEEDS**
- **REDUCED ROLL PICKING**
- **LOWER OILING COSTS**
- **GREATER BREAKING STRENGTHS**
- **BETTER YARN EVENNESS**
- **REDUCED ENDS DOWN**
- **INCREASED SPINDLES PER OPERATOR**

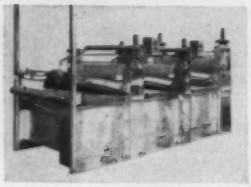
ROBERTS COMPANY

SANFORD, NORTH CAROLINA



Continuous open-width desizing at 100 yards per minute

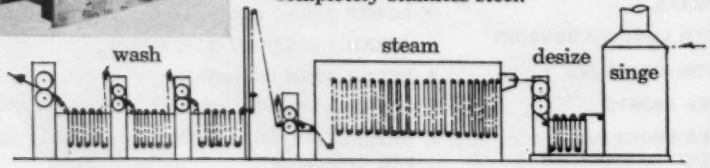




Twills, gabardines, etc., are safely handled without wrinkling in this new desizing range. *Only* the Cook patented automatic tension-controlled steamer now makes it practical to do this job continuously. The complete range includes a roll feed, singer, desize saturator, continuous steamer and washer.

The new enzyme saturator has 2 compartments and 2 sets of squeeze rolls. The solution is recirculated and screened to maintain uniformity and freedom from lint. Automatic controls maintain solution strength.

The new enzyme washer is designed to utilize a new principle of counterflowing the washwater. Better washing is obtained with less water used. All these machines are completely stainless steel.



Cook FINISHING, DYEING, BLEACHING, MERCERIZING, OPENING & WASHING RANGES

COOK-P&N MACHINE CO., INC.
365 DORCHESTER AVE., BOSTON 27 - CABLE COOKPAN

Shorts and Remnants

most popular booth at the Show [for us].

► The Veeder-Root boys get around. Our Editor says he wrote them a question on counters, and just as the answer from **Geo. Logan** arrived, **Harry Mansfield,** southeastern representative, was in our office with the answer.

► **Frank H. Leslie,** of Leslie & Co. (selling agents) and a salesman too, said to the N. C. Tex. Mfr. Assn. that "Perhaps we are in the grips of that old school of thought which was *once* the guiding philosophy of the textile industry; 'Get your costs as low as you can; sell at any price you can get and put the other fellow out of business!' We should know now . . . in the South, at least, that old textile mills never die; they simply integrate" . . . We like his definition of salesmen and are sending it along to ours. If you don't have it, let us know. We will send it to you.

► Somebody called dd and leslie tillet, inc., the house of T fabrics (ny) wrote for our Sept. issue. Cross our heart, there wasn't a single capital letter except T in the whole letter. Try it sometime.

Whiprolls for Fancy

"We would very much appreciate it if you could send us a reprint of the article 'Use Whiprolls to Get Fancy' (Apr. '55) . . . "

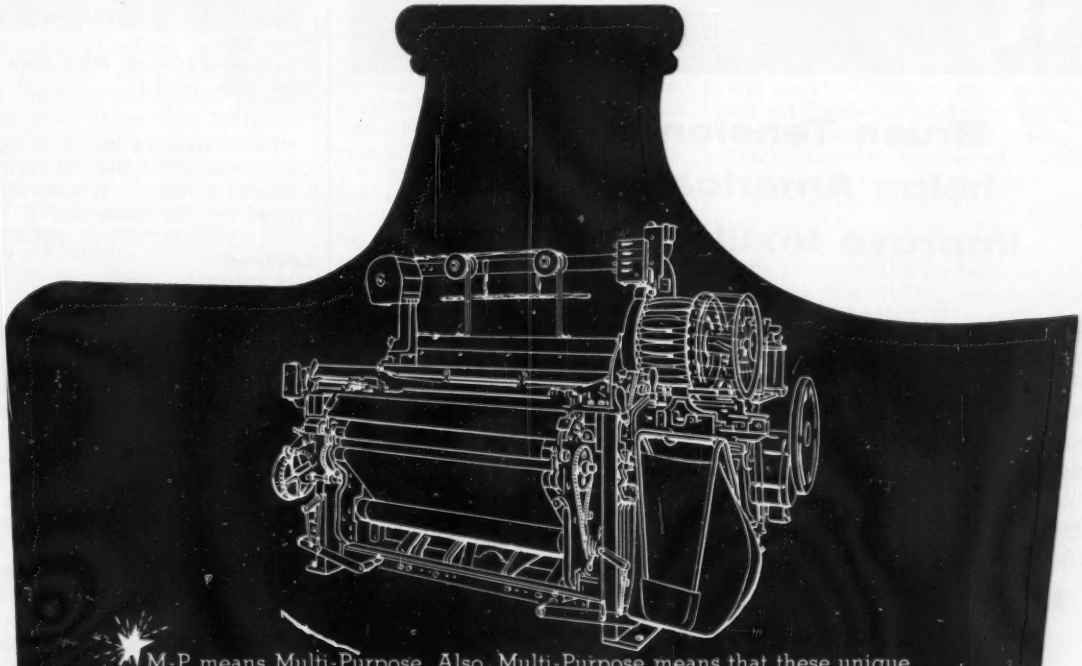
HENRY J. LINTON
Iselin-Jefferson Co., Inc.
New York, N. Y.

YOU CAN DIP INTO THAT

"OLD BLACK-INK MAGIC"

ANY TIME YOU WANT TO

...WITH M-P LOOMS IN YOUR WEAVEROOM



M-P means Multi-Purpose. Also, Multi-Purpose means that these unique looms can be quickly converted, *right in your mill*, for equally efficient operation on plain or fancy fabric constructions, according to the swiftly changing dictates of fashion. *So see C & K today.*

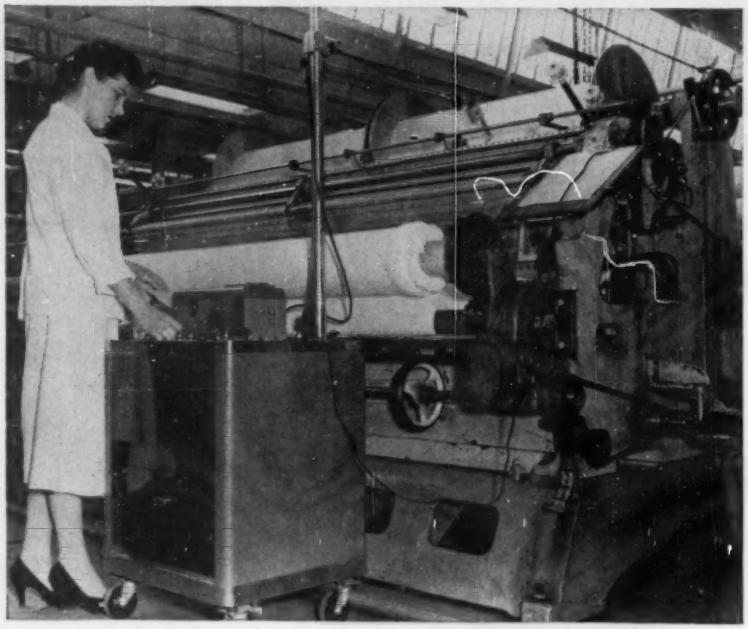
CROMPTON & KNOWLES *Loom works*

WORCESTER 1, MASSACHUSETTS, U. S. A.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are WOVEN Fabrics.

Charlotte, N. C. • Philadelphia, Pa. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.

BRUSH TEXTILE INSTRUMENTS



Brush Tension Analyzer helps American Viscose improve textile processing

This test setup on a tricot knitting machine at Avisco's Textile Research Dept. utilizes a Brush Analyzer to measure tension on viscose dull yarn. The Analyzer measures and permanently records on graph paper both static and dynamic tensions from 1/10 to 400 grams in filamentary materials.

Mounted on casters, the unit can be used in research, or easily rolled to various production machines. It improves quality control and reduces costs by indicating trouble spots due to improper tension. For information on how Brush Textile Instruments can help *you*, contact our Southeastern Office or write Brush Electronics Company, Department T-12, 3405 Perkins Ave., Cleveland 14, Ohio.

BRUSH OFFERS COMPLETE INSTRUMENT SERVICE

TENSION ANALYZER* IMPERFECTION COUNTER
UNIFORMITY ANALYZER* LAP TESTER
*Trade-Mark

SOUTHEASTERN OFFICE:
GREENVILLE, SOUTH CAROLINA
91 Cleveland St. • Phone 5-4079

Trained servicemen and complete stock of parts in the Brush Southeastern Office assure fast service when required.

BRUSH ELECTRONICS COMPANY
INDUSTRIAL AND RESEARCH INSTRUMENTS
PIEZOELECTRIC MATERIALS • ACOUSTIC DEVICES
MAGNETIC RECORDING EQUIPMENT AND COMPONENTS
BRUSH ELECTRONICS
Division of Clevite Corporation

Shorts and Remnants

Measuring Top Roll Pressure

" . . . an instrument is described for measuring the pressure of the top roll. [July '55 p. 107]. We are very much interested in this instrument and would appreciate your letting us have the name of the manufacturer. . . "

K. E. EPHRAIM
Lendt & Company, Inc.
New York 17, N. Y.

► That device was made by Whitin Machine Works, Whitinsville, Mass., experimentally. Further data from them.

"Tufted Textiles"

" . . . We would appreciate your sending us four additional copies [June '55] . . . "

LOUIS MELTZER
Sales Mgr.
Patchogue-Plymouth Mills Corp.
New York, N. Y.

"The Library of the U. S. Tariff Commission will appreciate receiving a reprint or tear sheets of the article 'Tufted Textiles' [June '55] . . . "

DOROTHY R. McLEAN
Librarian
U. S. Tariff Commission
Washington, D. C.

"Winding - '47, '48, '49"

"I would appreciate very much if you would supply me with reprint copies of all articles written by Jesse W. Stribling on 'Winding Machines—Principles and Practices' . . . "

EARL BILSKY
Celanese Corp of America
Cumberland, Md.

► These articles were reprinted by Universal Winding Co., Providence, R. I.

"Wet Processing"

"We have a section from your September edition of the TEXTILE INDUSTRIES magazine which presents a round table discussion for the wet processing industry. If available, we would appreciate receiving about 4 tear sheets of this particular section."

S. H. QUIST
Asst. to Pres.
Burlington Mills, Inc.
Burlington, Wis.

"Aw Rats"

" . . . You carried an article entitled

Keep Standards High With Standard Finishes

by JOHN J. BLOETJES

Metropolitan N. Y. Sales Representative

The problem of whites on acetate, nylon, Dacron, Orlon, and all synthetic fibers are solved with the use of Standafin 77, a fully polymerized resin in emulsion form that requires no curing or after-treatment, no washing, and is readily applied by ordinary finishing procedures on conventional equipment. The problems of yellowing of whites and light shades are eliminated; the worry of odor is gone.

Standafin 77 imparts a soft, silky hand, is an exceptionally good non-slip and is compatible with starches, weighters and dullers. The cost of finishing with Standafin 77 is low, as you use small percentages of this resin. In most formulas, 2 to 5% of Standafin 77 has been found to do an exceptional job.

In finishing of Nylon and Dacron for men's shirtings Standafin 77 imparts a full soft hand that gives wonderful quality to these fabrics. This product also has very good anti-static properties. Finishers of Acetate satins that require a high lustre and good non-slip qualities for use in underwear, etc. find that Standafin 77 gives these qualities, as well as the assurance that the product does not irritate the skin or cause dermatitis.

Standafin 77 is easy to use as it goes into solution very readily and does not foam. It is dissolved in approximately an equal amount of water at 120° – 140°F. and the solution added to the bulk of the finishing liquor. The goods are padded on a thoroughly cleaned quetsch at 120°F. Curing is unnecessary but drying must be complete with no tackiness resulting from insufficient drying. If padding and drying in two separate operations is necessary, it is well to batch up loosely or run into a box and avoid partial or uneven drying.

Calendering, decatizing, etc. now follow as desired. It has been found that a light calendering, with just the weight of the warm roll as set, tends to fluff up spun rayons by breaking down any surface film, although this may be found unnecessary.

Let STANDARD help you standardize your finishing standards.

Standardgrams

Pyrotex 121, an Economical Wet Processing Agent for All Fabrics

While there are hundreds of detergents on the market today, Pyrotex 121 has been found to answer the dyers' need for a product that is easy to handle, easy to dissolve, and one that can be used on all fabrics.

Having a pH of 7, Pyrotex 121 can be used on acetate, rayon, nylon, Orlon, Dacron and all synthetic fibers. It dissolves easily in water, to form a neutral solution having good stability in hard water.

Low cost operation results from small amounts of Pyrotex 121 needed for boil-off, scouring, penetration, dyeing, print washing, after soaping and naphthol dyeing. Best results are obtained when used with TSPP, tripolyphosphate, etc. Use of Pyrotex 121 reduces the number of rinses because of its easy rinsability.

Pyrotex 121 has exceptional sudsing qualities which are very necessary, particularly in jig dyeing. This promotes a clean bath. In jig scouring and dyeing, one to two pounds of Pyrotex 121 per jig is usually sufficient. In regular stick boil-off or continuous boil-off machines, such as Hermas, Henniken Boil-Off Machines, Morrison or Van Vlaanderen, ⅛ to ¼ % on the weight of the liquor is usually sufficient.

In dyeing, Pyrotex 121 promotes levelness, penetration and clear shades; chafing and rub marks are prevented and the goods are left with a soft, pleasing hand.

We recommend you try Pyrotex 121 – it's truly the "Aristocrat of Detergents."

Standafin T. Conc. Gives Swish to Taffeta

When a taffeta finish requiring swish, non-slip and extraordinary character is needed, send for STANDAFIN T CONC. It imparts a rustling sound, firm hand and fullness that is so desirable in this type of cloth.

STANDAFIN T CONC. is a non-curing resin that requires no after-treatment or washing. It can be used with weighters and water repellent compounds.

STANDAFIN T CONC. is easy to use on pad, quetsch, or Palmer tenter unit. It will not mark off and is not affected by atmospheric conditions.

Phone us and switch to STANDAFIN T CONC.

Standafin 92 Uses

For a blanket binding finish that imparts a smooth round hand as well as a good luster, use STANDAFIN 92. This product has uses in the children's and ladies' blouse field as well.

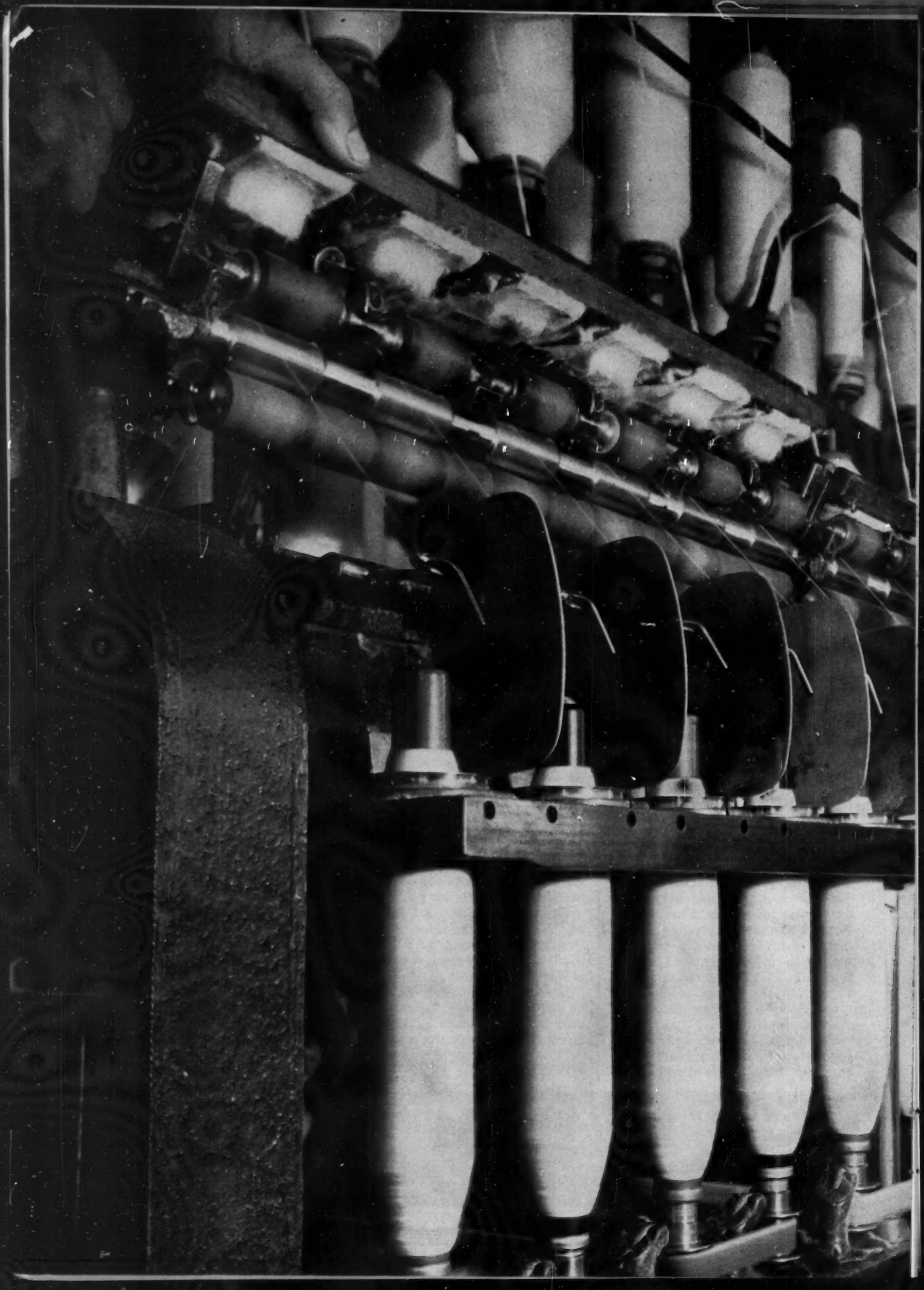
Phone or write us for samples and information on this product.

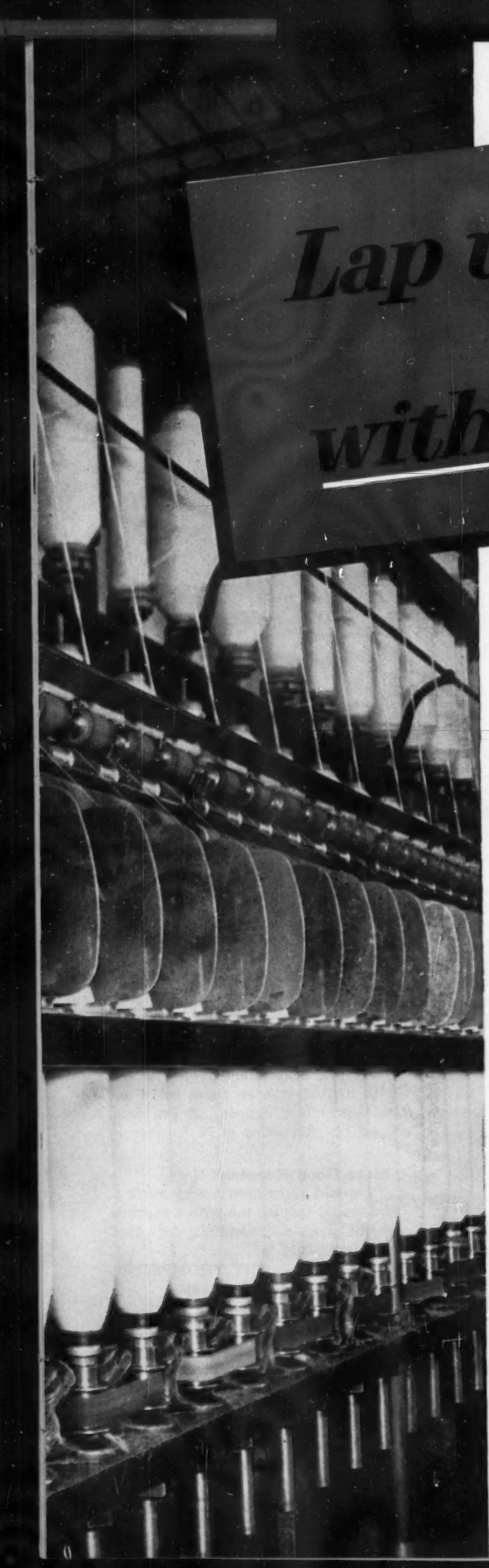
STANDARD CHEMICAL PRODUCTS, Inc.

HOBOKEN, NEW JERSEY · CHARLOTTE, NORTH CAROLINA

CHATTANOOGA, TENN. · PATERSON, N. J. · SWANSEA, MASS. · SALISBURY, N. C.

SUNBURY, PA. · SACRAMENTO, CALIF. · GREENSBORO, N. C. · GREENVILLE, S. C.





Lap ups reduced 4 to 1 with Dayco Cots

That's the record for one southern mill* after extensive tests of Dayco Cots. Regardless of weather—hot, cold, muggy or rainy—high humidity or low, Dayco Cots minimized lapping 4 to 1 over other cots.

Even in "dog days", when control of humidity was next to impossible, Dayco Cots stayed dry, never becoming gummy or sticky. Principal reason is the exclusive Dayco construction. Made of finest synthetic rubber compounds, Daycos have no large rough fillers that cause excessive lap ups and ends down or ingredients that become soft or sticky on highly humid days. Daycos are saving a lot of downtime for mills everywhere.

Why don't you make a money-saving test? Write Dayton Rubber Company, Textile Div., 401 South Carolina National Bank Building, Greenville, S. C.

Name on request.

GOLDEN JUBILEE

Dayton Rubber

50 YEARS OF PROGRESS

Dayco and Dayton Thorobred Products for Better Spinning and Weaving

© D. R. 1955

NEW...Sales-winning TEXTILE PACKAGING

for better protection, better economy, better buyer-acceptance...

EASY AUTOMATIC OPERATION

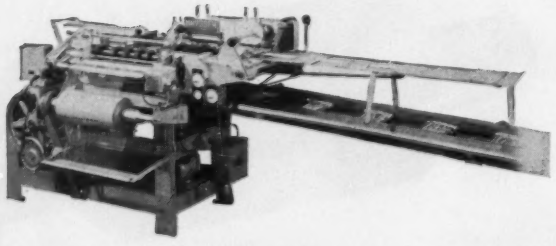
Regardless of size or shape, you get a neat, tight, perfect-register wrap on every package with a Hayssen automatic wrapping machine. Also, production men report savings up to 80% over previous wrapping costs.

FASTER, SIMPLE TO CHANGE SIZE

No complicated adjustments from size-to-size on a Hayssen. No gears or sprockets to remove or change... no need for expensive mechanics to change size, either. So simple the operator does it on the job.

COSTS LESS, DURABLY BUILT

Hayssen's simple, rugged design, using fewer moving parts, keeps these machines working and saving through years of dependable, trouble-free service. Both the cost of the machine and the maintenance are so low you won't believe it.



Let our Packaging Engineers help you with your packaging problems... WRITE US TODAY for further details.

Hayssen MFG. COMPANY

Since 1910, Manufacturers exclusively of automatic wrapping and packaging machines.

Dept. TI-12, SHEBOYGAN, WISCONSIN

Atlanta • Boston • Chicago • Dallas • Denver • Detroit • Los Angeles • Minneapolis
New York • Philadelphia • St. Louis • San Francisco • Seattle • Montreal • Toronto

Shorts and Remnants

'Aw, Rats' . . . We are contemplating preparing a little brochure on rat control and are so impressed by the title of your article that we are asking your permission in allowing us to 'appropriate' it for use in our brochure. . . . "

LEON R. ROBBINS
Adv. Mgr.
Orkin Exterminating Co., Inc.
Atlanta, Ga.

► Permission granted. This is *not* original, we're sure.

"Reduce F-F Seconds"

"I would appreciate receiving 4 copies of the article entitled 'This Simplified Handling System Reduces Full-Fashioned Seconds' [Sept. '55] . . . "

A. S. THOMPSON, JR.
Supersilk Hosiery Mills
London (Ont.), Canada

"More Ultra Sonic Dyeing"

" . . . You have an article regarding Ultrasonic Dyeing being marketed by General Ultra Sonic Company [Sept. '55] . . . "

J. E. TAYLOR
Exec. V. P.
Shelton Looms
Rocky Mount, N. C.

" . . . We saw an article on 'Ultrasonic Dyeing.' We would appreciate it very much if you can send us the address of General Ultra Sonic Company. . . "

S. J. DUDA
Jefferies Processors, Inc.
Philadelphia, Pa.

► Now, that fancy dyeing is OK with us, but let's let them get it going — whether General of Hartford, Conn., or Acoustica of N. Y. does it.

"More Good Napping"

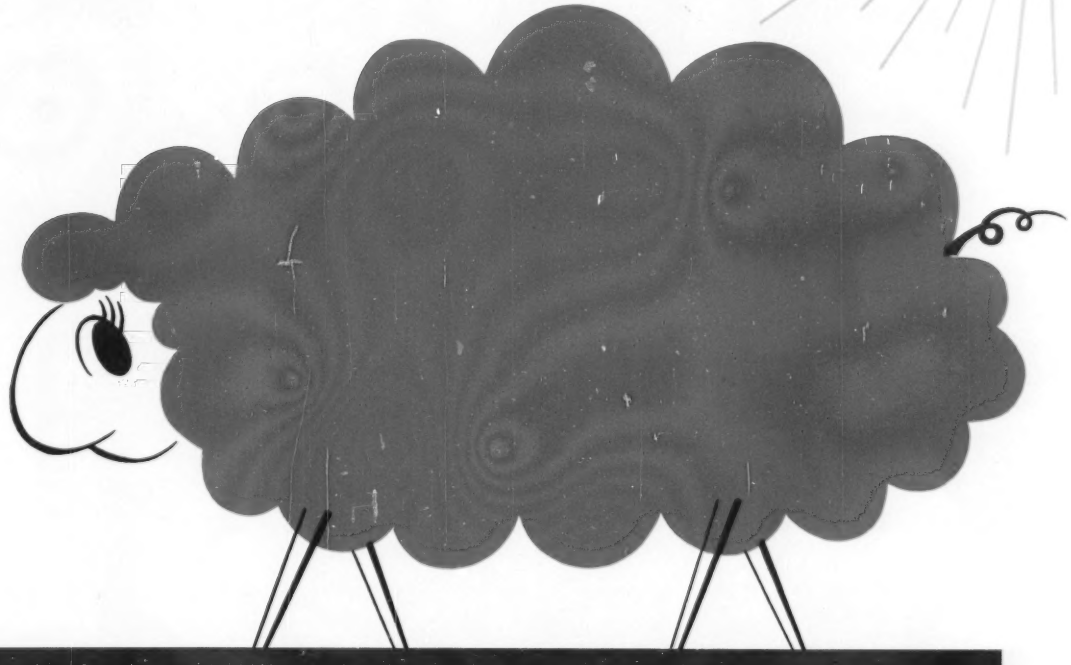
"I would appreciate it very much if you would furnish me with 4 reprints of the article 'Essentials for good Napping' [July '55] . . . "

GUY THOMPSON
Clearwater Finishing Plant
Clearwater, S. C.

Nylon-Face Blankets for S. A.

"We saw announced . . . under the heading 'Finishing Increases the Fabric Strength' a Nylon-Face Blanket which is being used in Printing at the Santee Print Works [May '55]. We would like to have a quotation

for Wool and mixtures that are "safe in the sun"



NATIONAL CHROMOLAN® RED GRE

In all strengths National Chromolan Red GRE has many desirable properties that commend its use on wool and as a union dye on nylon-wool mixtures. This low pH pre-metallized color produces moderately bright shades of yellowish red with very good to excellent fastness to light, washing, perspiration, carbonizing and cold water bleeding.

A good money value, National Chromolan Red GRE deserves a place in your wool and wool-mixture dye formulations. A working sample will demonstrate its worth. Our Bulletin 421 gives complete properties. Both are yours-for-the-asking from our nearest office.

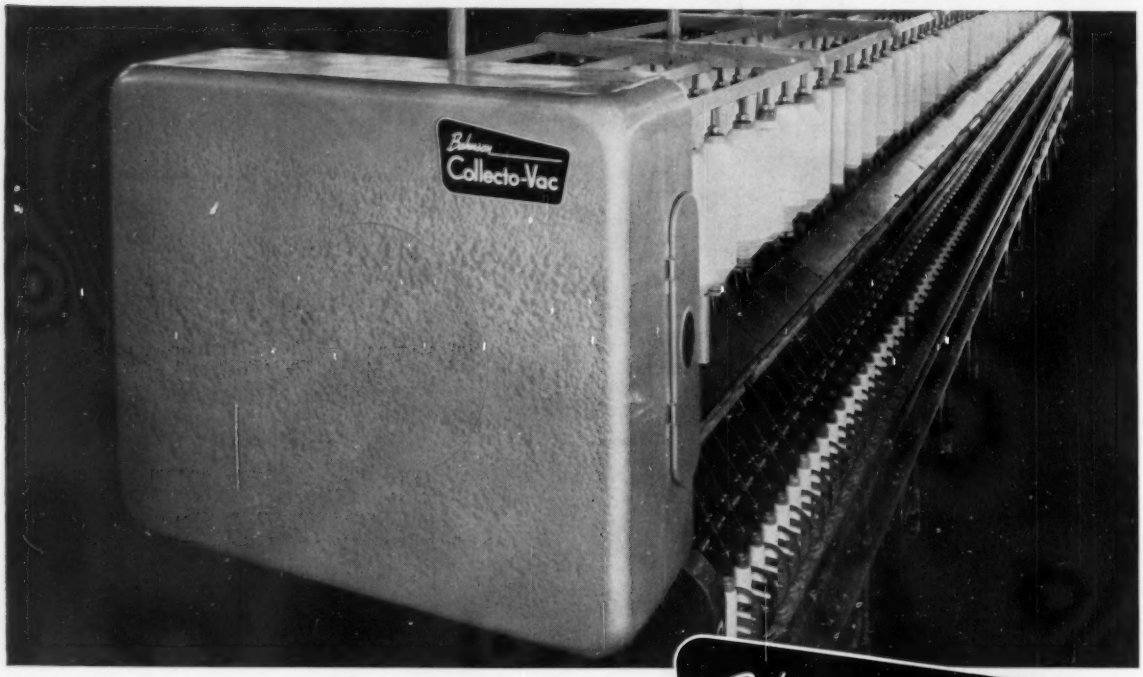
NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

Boston Providence Philadelphia Chicago San Francisco
Portland, Ore. Greensboro Charlotte Richmond Atlanta
Los Angeles Columbus, Ga. New Orleans Chattanooga Toronto

Bahnson's 40 years' air-handling engineering experience brings you

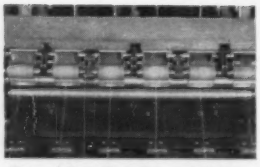
Important savings and greater efficiency

in automatic broken-end collection



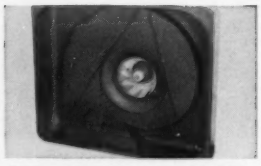
with the NEW

Bahnson Collecto-Vac



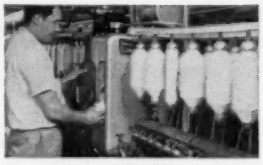
Durable aluminum flutes

Anodized aluminum flutes *eliminate flute warpage* and minimize static electricity build-up on the smooth collecting surfaces.



Low power consumption

Specially engineered main duct gives maximum pressure distribution throughout system utilizing a Bahnson designed fan for high air handling efficiency.



Functional double entry

Vacuum sealed doors on each end of collection box facilitate operation, save time and money.

High suction efficiency

Collection ducts and flute connecting tubes are completely air-tight due to specially compounded seals at tube joints. Efficient suction performs double duty, too, in lint and fly recovery.

91 OF THE TOP 100

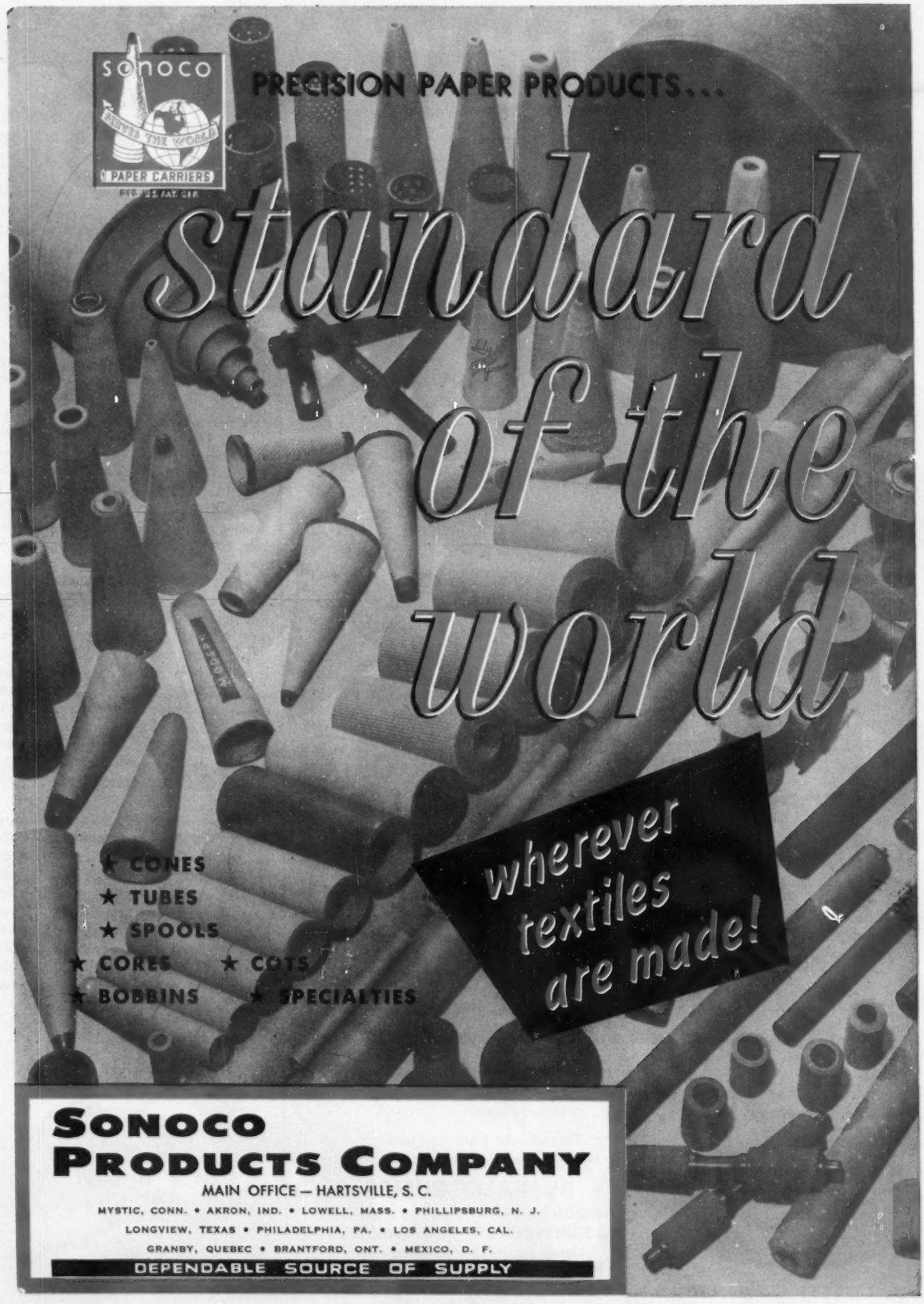
Of the nation's 100 top textile manufacturing firms, 91 are users of Bahnson equipment!

Bahnson COMPANY
WINSTON-SALEM, N. C.

WRITE US TODAY

for additional information on the *new* Bahnson Collecto-Vac.

AIR CONDITIONING • CLEANING • VACUUM COLLECTION


sonoco
MOVES THE WORLD
PAPER CARRIERS
PRECISION PAPER PRODUCTS...
standard of the world
★ CONES
★ TUBES
★ SPOOLS
★ CORES ★ COTS
★ BOBBINS ★ SPECIALTIES
wherever textiles are made!
SONOCO PRODUCTS COMPANY
MAIN OFFICE — HARTSVILLE, S. C.
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DEPENDABLE SOURCE OF SUPPLY

For PUMPING SATISFACTION

***Now* and *Years* from Now!**

TYPE CL PUMP FOR CLEAR WATER OR FOR A VARIETY OF CHEMICALS

Widely used for zone air conditioning, circulation and agitation as well as handling many corrosives, this single suction pump stands up under hard service. Notice the large ball bearing with its oversize oil reservoir. The shaft, as you can see, is proportionately oversized. The efficient impeller, too, is built to take the shocks incident to many of today's services. In fact, from the rugged stand to the solid-shell clear-passage casing, there isn't a flimsy or unproven feature—and that's why "Buffalo" users are enjoying pumping satisfaction 10, 20, 30 and more years after installation. It's what we at "Buffalo" call the "Q" Factor*. For details on Type CL Pumps, *write today for Bulletin 976D* .

It may be that you need a *double* suction pump—a multistage pump—sump pumps—non-clogging pumps, or other designs. "Buffalo" builds all types . . . all with this same "Q" Factor*. Your nearby "Buffalo" factory trained engineer will give you expert advice and information to help you solve any pumping problem . . . to satisfaction.

*The "Q" Factor—the built-in Quality which provides trouble-free satisfaction and long life.

"Buffalo" PUMPS

BUFFALO PUMPS
DIVISION OF BUFFALO FORGE COMPANY
175 MORTIMER ST. BUFFALO, N. Y.
Canada Pumps, Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

Shorts and Remnants

for one of these blankets. . . ."

A. A. SEBIANNO
Dir. Cia Nacional de tecidos Nova America
Rio de Janeiro, Brazil

► Okay, and where is our friend, Mr. Sutton; but how about a quotation on "Versaprint" blankets by the same firm. We are told they are better.

► **Paul F. Kemper,** Supt. Sher Woven Label, Park Ridge, N. J., sends in a card requesting illustrations and data on narrow fabric woven label looms. We forwarded to Fletcher Works, Phila.. and Crompton & Knowles, Worcester, Mass. They should take care of him. Many other readers use the handy return card just ahead of our booklet pages for specific data. Go ahead and try it. We will do our best for you. One reader used it to cancel his subscription. Don't do that!

► **B. Steve Harris,** Joseph Bancroft & Sons Co., Wilmington, Del., likes our book "Draper Loom Fixing" so well he wants to know what other books might be available on winding, lubrication of yarns for knitting, plying of filament yarns other than crepe or combination, quilling, warping, slashing, and weaving fabrics. There were more, but this is plenty. Any advertiser wishing to supply *please* write Mr. Harris.

► In closing, we understand from our figures that if you get up to the $32,000 question and answer it, you'd better take the dough and leave quietly. With taxes out, you already have $16,600 or thereabouts. If you try for $64,000, you only stand to win some $8,708 (still thereabouts) more, so the odds are against you. Take the money and subscribe to or advertise in T.I., and a

to you all.

It's no secret to the textile industry that consumers and retailers prefer fabrics with lasting color beauty.

It's easy, too, to save yourself all that trouble over alibis when color fails to give satisfaction. You'll find it pays to specify

ALTHOUSE

Leading Specialist in Dyes for
Cotton — Rayon — Nylon and
Other Synthetics and Blends

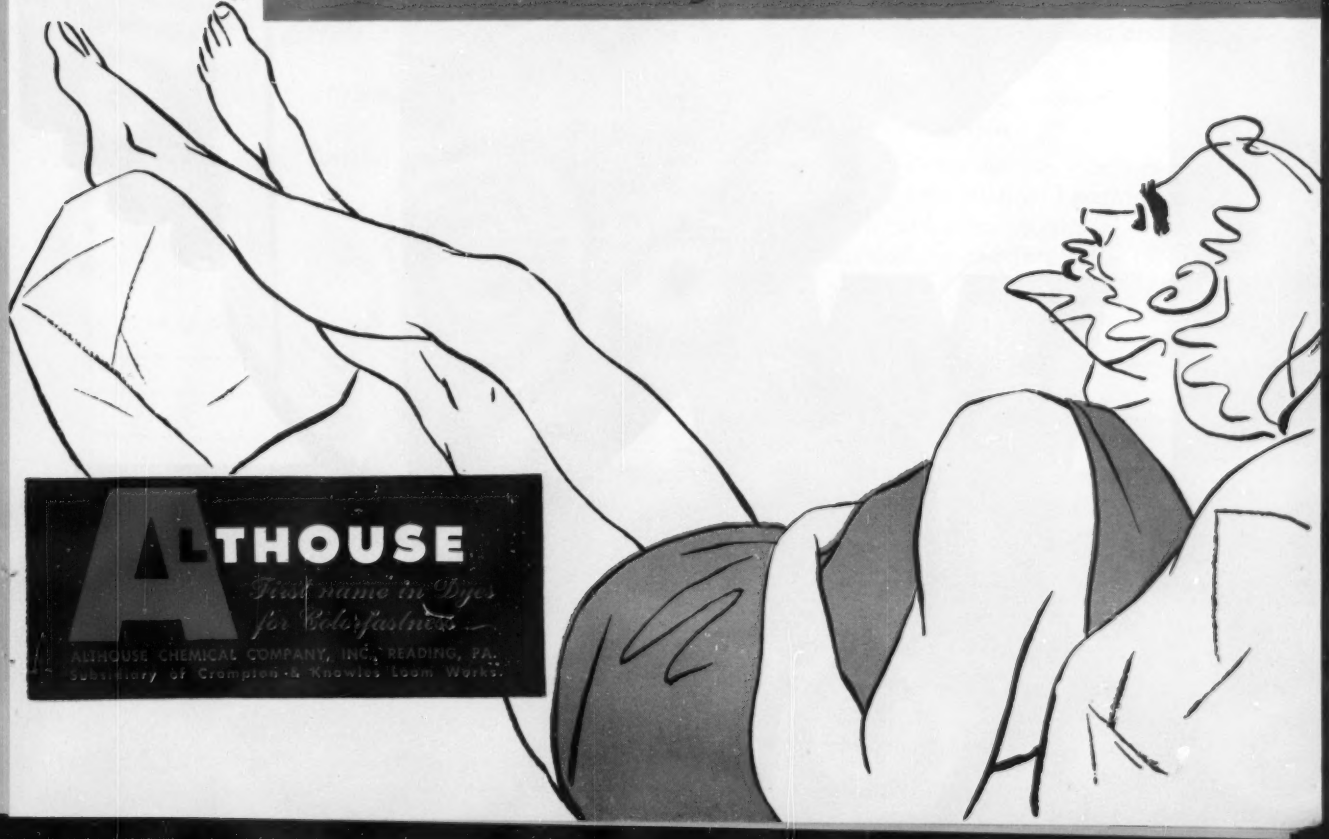
Althouse researchers have pioneered for 40 years in raising textile industry standards of

COLORFASTNESS

This record of leadership assures highest quality performance when you specify these famous, exclusive Althouse dye specialties:

Superlitefasts	Nylanthrenes
Azoanthrenes	Nydyes
Supernylites	Sol-Aqua-Fast

it looks nice, but will it fade?

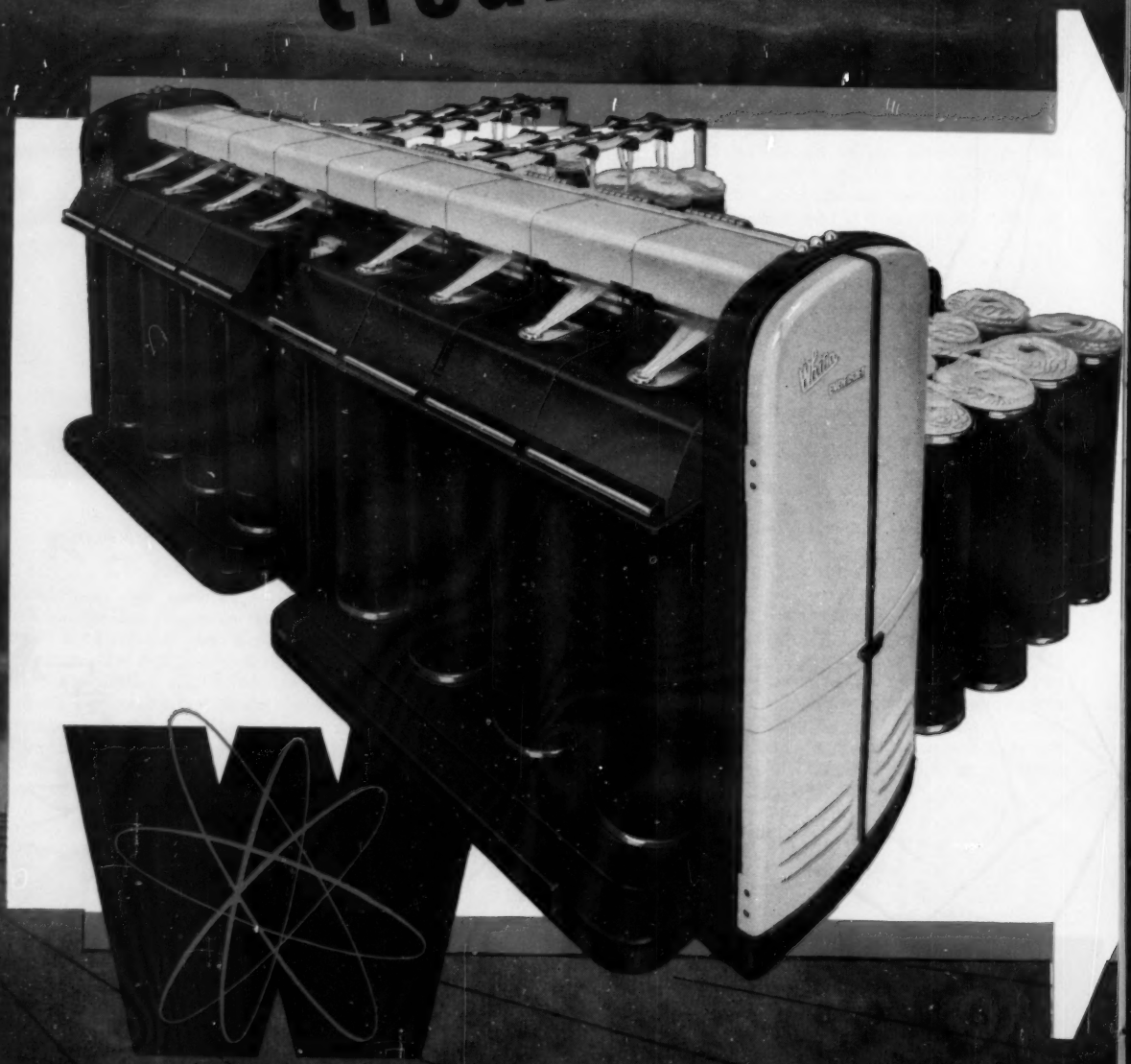


ALTHOUSE

First name in Dyes for Colorfastness

ALTHOUSE CHEMICAL COMPANY, INC., READING, PA.
Subsidiary of Crompton & Knowles Loom Works

creating NEW



HORIZONS in Drawing

the WHITIN Even-Draft* Drawing Frame

THE Whitin EVEN-DRAFT* Drawing frame is an entirely new textile machine which brings to the drawing process greatly advanced standards and levels of production, quality, flexibility and operation never before thought possible. It creates new horizons in drawing — in lowered machinery requirements — lessened costs — and from both direct and indirect benefits, greater mill profits.

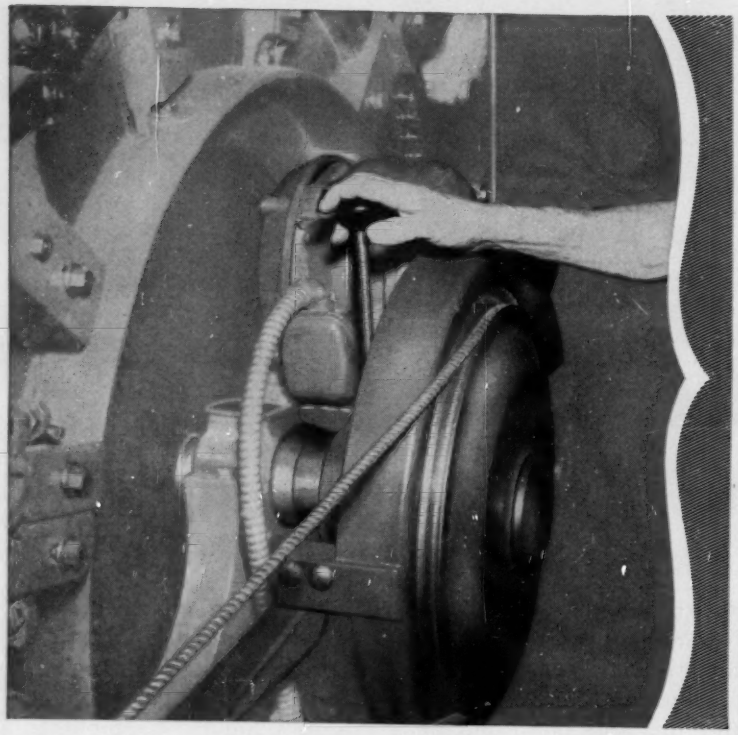
- ★ **From 250-300 feet per minute Front Roll Delivery** — Production two to three times more than conventional machines, depending upon mill conditions and production needs.
- ★ **For all fibers up to 3"** — The first universal drawing frame — for cotton, spun synthetics and blends.
- ★ **Outstanding Sliver Quality** — Improved uniformity in both carded and combed sliver — 6 or 8 ends up.
- ★ **Pneumafil Clearer Units** — A brand new way of removing waste fibers. Developed for, and an integral part of, this machine.
- ★ **Entirely New Design** — Two independent four-delivery heads; vibration proof construction; precision tolerances; anti-friction bearings; unique four over five roll drafting; new overarm weighting; no-twist can table; electronic stop motions and signal lights; 14" – 15" – 16" cans, 36" or 42" high.

*Trade mark

Whitin MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.



NO SEPARATE STRIPPING DEVICE OR CHANGES IN PROCEDURE WITH SOUTHERN STATES CARD DRIVES

There is no need to run the risk of costly accidents as a result of changes in operating methods when you install individual card drives in your mill. Southern States has eliminated that problem.

An exclusive feature—a standard-diameter, grooved pulley, built on the main drive—permits stripping in the usual manner. In every case where Southern States Individual Card Drives are used, mills report that stripping is simpler, quicker and safer.

The Southern States Card Drive is priced low enough to fully justify the elimination of old-fashioned lineshafting and belting with their well-known headaches. It is a packaged unit, quickly and easily installed. Mounts directly to card frame. No complicated reduction unit or overhung load on cylinder shaft. Occupies about the same space as a flat-belt drive. Leaves the flats clear and eliminates the danger of springing arches or damage to flats as a result of vibration.

Every month increasing numbers of Southern States Individual Card Drives are going into service. Let our representative show you how they can be made profitable for your mill.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

For further information use Handy Return Card, Page 205

What the TEXTILE MILLS *are doing*

The Philadelphia, Pa., hosiery finishing plant of **NoMend Hosiery, Inc.,** has been closed. Knitting operations at Lebanon, Pa., and Gainesville, Fla., are not affected by this ending of operations in Philadelphia.

Patentex, Inc., is the name of a company recently formed by **Chadbourn Hosiery Mills, Inc.,** and **Burlington Hosiery Co.** for the purpose of taking over the ownership, development, and licensing of the two companies' patents pertaining to the manufacture of women's stretch hosiery and the yarn used in this product. Patentex will grant licenses to throwsters, hosiery, and other manufacturers on a "reasonable and nondiscriminatory basis, permitting them to use the methods and techniques developed by both organizations." 350 Fifth Ave., New York City, is the address of Patentex. Lawrence Greenwald and William J. Leath direct the licensing program.

"Government inspired competition" from Japan was the reason given for the cancellation by **The Springs Cotton Mills** of its plans to enlarge the Eureka plant at Chester, S. C., and to install printing machines at the finishing plant at Grace's Station, S. C. Also, new machinery orders for the Kershaw and Fort Mill plants were cancelled.

By next summer, installation of a complete system of central station air change and humidity control for the **Startex (S. C.) Division of Spartan Mills** will be completed.

A 50,000-spindle, 1,700-loom cotton mill is under construction in Hofei in the Anhwei Province of East China. It is expected that the joint state-private plant will be completed in 1957 and operations started at that time. Cotton produced in Anhwei Province will be utilized. Sung Sing Cotton Spinning & Weaving Co. and the Wing On Cotton Spinning & Weaving Co. in Shanghai, both privately owned, are providing half of the investment for the construction of the new mill.

One hundred new 46-inch looms have been installed by **Strickland Cotton Mills** in Valdosta, Ga., per-

mitting the mill to produce a wider range of fabrics. The looms are housed in a new weave shed.

More than $750,000 worth of its houses have been sold to its employees by **Pacolet Manufacturing Co.,** New Holland, Ga.

Construction of an 8,000 sq ft addition to the **Pendleton Mfg. Co.** mill in La France, S. C., has been completed.

Reorganization and incorporation of **Penlyn Knitting Mills, Inc.,** 1208 Race St., Philadelphia, Pa., has been announced. Al Goldstein is president of the new corporation; Jack Soowal, treasurer and sales manager; and Lawrence Borofsky, secretary and production manager.

The baseball yarn manufacturing plant of **Lannom Manufacturing Co., Inc.,** now located in Grinnell, Iowa, is to be moved to Tullahoma, Tenn.

Fifty 46-inch looms are scheduled to be delivered to **Spartan Mills,** Spartanburg, S. C., this month, and another 150 looms are to be delivered by the end of February, 1956. About half of the basement of the company's No. 2 mill has been excavated to make room for the new looms.

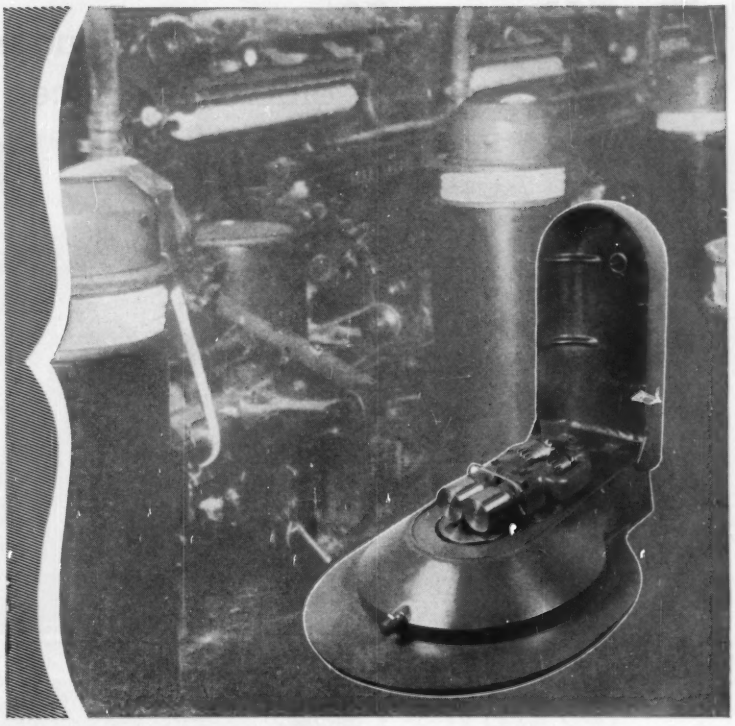
The **Textured Yarn Co.,** subsidiary of Nathan Schwartz & Sons, has leased an additional 12,000 sq ft of manufacturing space to increase the firm's footage at 4041 Ridge Ave. in Philadelphia to 20,000 sq ft. Expansion of production facilities for its Tycora yarns is planned by the company.

Included in a $250,000 expansion program recently launched at **Valdese (N. C.) Manufacturing Co.,** is replacement of the old spinning mill floors with new hardwood floors. Also, a new addition to the dyehouse has been built to facilitate handling of the many different colors and types of yarns processed.

Waumbec Mills, Inc., Manchester, N. H., has under construction an addition to its mill.

The Wanskuck Co., woolen and worsted manufacturers with two plants in Providence and one in Burrillsville, R. I., has been sold to the New England Butt Co., Providence, R. I., wire and machinery manufacturers.

The **Alkahn Silk Label Co.** of New York City has acquired the **Holland Woven Label Co.** of Williamsport,



SOUTHERN STATES COILER HEADS MAKE CONVERSION TO LARGER CANS A SELF-PAYING PROPOSITION

Every mill man with an eye for ways to cut card room operating costs knows the advantages of larger cans. But what some don't realize is that Southern States conversions are so economical that they pay for themselves—a fact proved by case histories of mills throughout the country.

The Southern States Universal Coiler Head, illustrated above, is designed for either 14- or 15-inch cans. It is adaptable to any make of coiler. Using this head, intermediate gearing, coiler base and *your existing stand*, an inexpensive installation can be made in your mill.

Then you can enjoy all of these advantages: simplified oiling; ease of maintenance; smaller parts inventory; more efficient handling; lower operating costs; and improved quality. The photograph shows the simplified design of this head. Notice the streamlined cover and bonnet. Cut tooth gears and oilite bearings are used throughout. It is precision built for years of satisfactory service.

Get full facts from your Southern States representative, or send your request direct to the home office for a quick reply.

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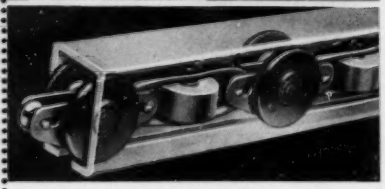

From the tiniest component to the overall design, Richards-Wilcox ZIG-ZAG Continuous Power Conveyors conform to the most rigorous quality standards. And higher quality pays for itself in the long run with more years of safer, lower-cost service.

Years of trouble-free service . . . more efficient use of plant personnel . . . elimination of bottlenecks . . . are some of the many benefits that R-W ZIG-ZAG Conveyors offer. They take materials handling *overhead*, out of the way, carrying loads up, down, in, out and around, "like water through a pipe". Six-inch pendant centers handle any load a man can lift in continuous production. A choice of drive units permits travel at any required speed with variations of 10 to 1 or better.

ZIG-ZAG Conveyors are unusually flexible, too. When changing conditions require alteration, expansion or relocation of systems, the job can easily be done by plant personnel, usually without waste of a single part.

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What the TEXTILE MILLS are doing

Md. "The Holland Co. will continue to operate as a unit, servicing its present customers with the same personnel and same facilities," Lloyd F. Kahn, president of Alkahn, said. "However, the combined organization will have greatly expanded creative, production, and service facilities for the approximately 15,000 manufacturers and retailers now doing business with the two firms." New officers of the Holland Co. are: president, S. F. Friedman; vice-president, Oscar Dewald; secretary, Mr. Kahn; and treasurer, L. P. Stanton.

A new five-story brick building located at 2442 Beekman Street in Cincinnati, Ohio, was recently occupied by **The Adler Co.** Stockinettes

T. D. Goldman (left), sales mgr., and Thomas C. Adler, pres., discuss plans for the new stockinette plant.

are being manufactured in this 40,000 sq ft addition, providing more space in the main plant for production of the company's hosiery lines. This is Adler's 90th year of operation.

The **Wautuppa Finishing Corp.,** Fall River, Mass., is the name of a firm organized to cut, dye, and finish corduroy materials. Occupying 52,000 sq ft of floor space in the former Kerr Mills of the American Thread Co., the corporation will employ about 75 persons in the beginning and that number will be increased to about 150 when full production is reached. J. Benton Dickison of Somerset, Mass., is president and general manager.

Objectives of a training program now being conducted for plant supervisors at **Ware (Mass.) Knitters, Inc.,** are: (1) To provide uniform procedures for job instruction in all of the company's departments and plants and (2) to standardize methods so

CRUSH-RESISTANT, WRINKLE-DEFYING COTTONS THAT MANY WASHINGS WON'T DISCOURAGE—YOURS WITH

RHONITE R-1*

Our wise little owl knows that cotton dress goods (or rayons or blended fabrics) become wonderfully wrinkle-resistant when treated with RHONITE R-1. Even repeated washings won't take away their fresh, springy beauty.

RHONITE R-1 treated fabrics can be calender-finished for a wide range of effects—from friction to deep embossed, from plain to moiré.

***RHONITE R-1** is another dependable chemical product for the textile industry made by the makers of LYKOPON.

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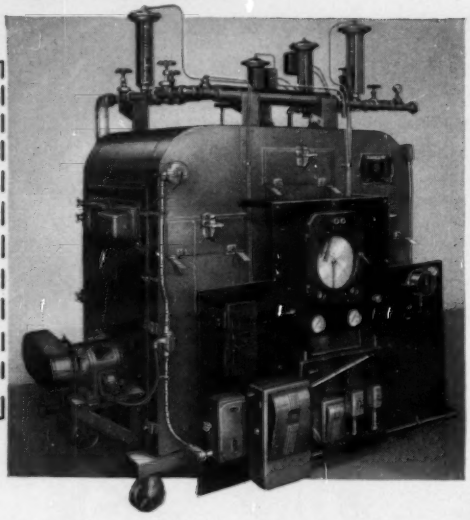
THE NEW **Portable LAB DRYER by SARGENT**

FOR OUTRIGHT PURCHASE or on a SENSIBLE RENTAL-PURCHASE PLAN



FULL SIZE — 8′-6″ high x 8′-0″ wide x 6′-7″ deep.

MOBILE — mounted on heavy-duty ball-bearing casters that lock securely into position.

FLEXIBLE, VERSATILE — for steam or electrical heating of air stream. Material tested in trays, suspended from poles, on rolls, or any combination.

INSTRUMENTED FULLY and completely — ready to go to work for you without delay.

Modeled on the famous Sargent-developed, designed and built, research dryer used in Sargent's own drying research laboratory.

Here, at last, is a dryer to help you solve those constantly recurring and ever different drying problems of new fibres, new blends, new fabrics. Simple to operate. Accurate at every setting. Fantastically flexible in its ability to reproduce any combination of factors influencing drying of stock. Automatic or manual operation.

We believe the new portable lab dryer is equipped with more positive controls and a more simplified method of changing drying conditions within the machine, than ever before offered.

A telephone call to the nearest Sargent representative, or direct to us, will produce any additional information you want—AND fast action!

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What the TEXTILE MILLS are doing

that each plant making the same item performs the operation in the identical manner. Not only is this program for supervisors, but for anyone who directs the work of others.

The Occupational Health Institute has announced that its Certificate of Health Maintenance was recently awarded to **Avondale Mills,** Sylacauga, Ala., and **Cheney Bros.,** Manchester, Me. The recognition is given to those plants which comply with the standards for medical service in industry as established and approved by the Industrial Medical Association.

The plant and equipment of **Manhattan Yarn Dye and Bleaching Co.,** Brooklyn, N. Y., have been acquired by **Chwatt Bros., Inc.,** another Brooklyn wet processor of yarns. Some new equipment is being installed. Upon completion of this Chwatt will have facilities for package and skein dyeing of cotton and wool yarns, mercerizing of cotton yarns, high-temperature dyeing of synthetic yarns, and garment and strip dyeing of synthetic fiber sweaters.

Courses in textile mathematics, industrial chemistry, fabric analysis, mechanical drawing, and wool grading and classification are included in the vocational education program now being presented at **Chatham Mfg. Co.** in Elkin, N. C. On the opening night 157 students enrolled to participate in the program.

Clinton Hosiery Mills, Ltd., with plants in Clinton and New Hamburg, Ontario, Canada, are now owned by a partnership consisting of two German knitgoods manufacturers, Besmer Teppichfabrik and Schmallenberg Strickerwarenfabrik, and an individual by the name of Werner Crawford of Toronto who is general manager.

Beaver Brook Mills, Lowell, Mass., formerly a unit of American Woolen Mills, was recently purchased by Zelkind Waste Co. of Worcester, Mass. Howard Mathewson continues as manager.

A new 250,000 sq ft building to house its operation in Cleveland, Tenn., is planned by **Peerless Woolen Mills,** a member of **Burlington Indus-**

The Hottest Tip

. . . in Shuttle News!

The New "Southern" short head Shuttle Tip

for

ADDED STRENGTH

LESS MAINTENANCE

REDUCED COSTS

Above drawing illustrates comparison between 846M and S-846M type Shuttle Tips. Note that head shape is exactly the same on both tips. The head length of the S-846M Tip is shortened, making possible increased shank length, thereby substantially decreasing the possibility of tip failure by loosening.

Due to tip complaints in the weaving industry SOUTHERN has undergone a period of constant research, development and tests to find the best material, form and method of attachment to overcome this serious problem.

RESULT...

A new tip was born—the new S-846M-5 Tip—and the world's finest shuttle "SOUTHERN" became finer than ever before.

Although the head is shaped exactly the same as its predecessor, its head length was shortened and the shank length increased, thereby increasing the surrounding holding properties by the addition of that much more wood.

Eliminate those Shuttle Tip headaches by contacting your nearest Southern Shuttles Sales Engineer for further interesting information on Southern's solutions to your shuttle problems.

Effect Your Greatest Economy By Buying The Right Product The First Time . . .

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SOUTHERN SHUTTLES

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Tempered Dogwood Shuttles • Duraweld and Hickory Picker Sticks • Supreme Reeds • Hard Chrome Electro Plating • Castings • Stampings

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IT'S A RARE OCCASION when a burglar pays a compliment to Cyclone Fence. On the contrary, the word Cyclone is poison to any hard-working member of the underworld.

You *can* buy cheaper fence than Cyclone, but it will cost more in the long run. Cyclone contains nothing but brand-new, top-quality material. The chain link fabric is woven from heavy steel wire—galvanized *after* weaving to prevent cracks that encourage rust. Erection is handled by full-time, well-trained experts, so you can be sure of a fence that stays taut and trim.

Cyclone engineers will be glad to help you solve your fencing problems. Meanwhile, *send for the free booklet.*

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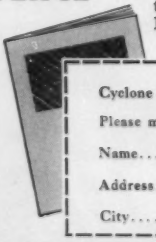

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What the TEXTILE MILLS are doing

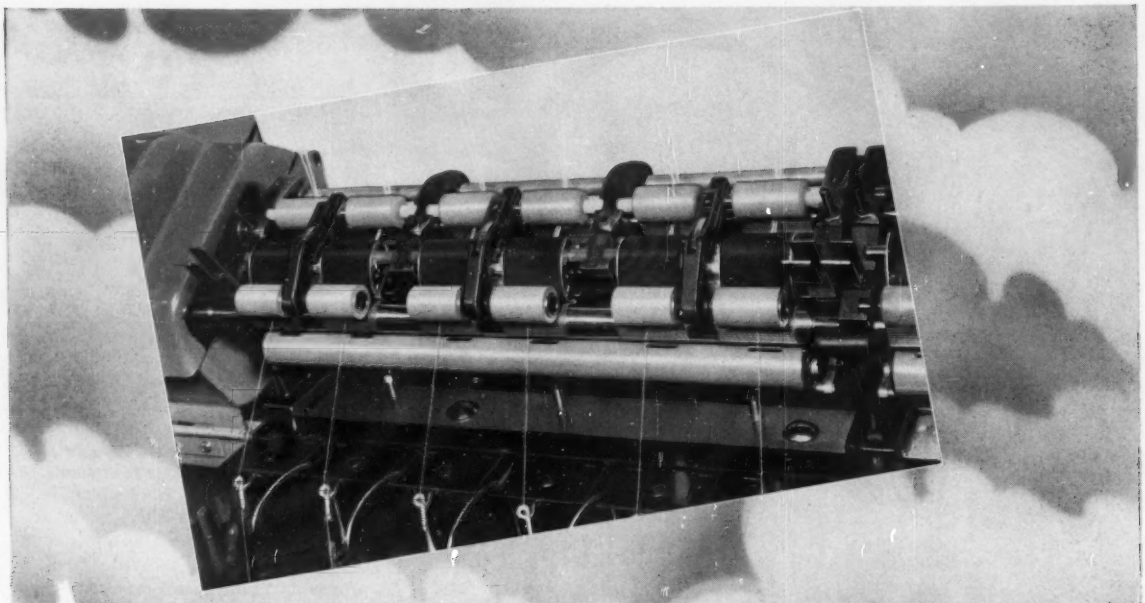
tries. When the new building, which is to be located on a 185-acre site about 1½ miles from Cleveland, is complete and equipment installed, processing operations will be expanded to include finishing in addition to yarn preparation and weaving. As a result, it is expected that about 90 additional operatives will be required. * * * A newly formed member of Burlington Industries is **Burlington Export Co.,** responsibility of which is all sales to export markets of products made by the member organizations of Burlington Industries. William R. Landa is president of the new company.

Meeting beautiful Laraine Day, wife of Leo Durocher, the former New York Giants manager, was one of the highpoints of the New York visit of this championship baseball team from **Collins & Aikman Corp.'s** plant in Ca-Vel, N. C. C&A recently

brought the 22-man team to New York for an expense-free, four-day holiday for winning the COPA industrial league's pennant and championship playoff. The Ca-Vel baseball team saw the Giants play at the Polo Grounds, dined at the Latin Quarter, watched Jackie Gleason filming his "Honeymooners" TV show, and attended an Army football game at West Point.

Debson Mill Inc., 645 Belleville Ave., New Bedford, Mass., is a new concern now in production weaving elastic fabrics on 20 looms. Harold E. Lawton, formerly with Leno Elastic Web of New Bedford, is president, treasurer, and manager.

Additions are under construction at two of the Dover mills—**Dover Yarn Mills, Inc.,** Buffalo, N. C., and **Dora Yarn Mill Co.,** Cherryville, N. C. The



1,250,000 SPINDLES OF SACO-LOWELL DUO-ROTH —BOTH STANDARD AND STAY-CLEAN*— *are now in operation producing higher quality, stronger, more even yarn in over 280 mills.*

1. The long, thin, flexible bottom apron passes the nose of the apron bar with a small radius of curvature in a manner which allows a close setting between the nip of the aprons and nip of the front roll, a condition necessary for the most efficient fibre control in the final drafting zone.

2. Without exception, mills using the Duo-Roth System have increased their drafts as much as 50 to 100 per cent, and at the same time have produced a yarn of greater strength and evenness.

3. The greater strength and evenness is vividly shown in a Duo-Roth installation producing 21's yarn from .75 hank single roving, employing a 4.52 twist multiple — the break factor secured is 2339. Previously, the same frames running regular drafting were producing 21's yarn from 1.50 hank single. With same twist multiple highest break factor obtainable was 2104.

4. Duo-Roth is cleaner; there is a reduction in clearer waste as the shorter fibres are efficiently controlled. After raising the draft from 19 on Roth to 33 on the Duo-Roth, one mill was able to extend the top roll cleaning period from 24 hours to 48 hours, on a three-shift basis. Another mill, with a 50 per cent increase in draft after changing to Duo-Roth, also extended the top roll cleaning period from 24 hours to 48 hours.

5. Duo-Roth was engineered to be a simple, quickly applied change-over to existing Roth installations. Mills having Roth frames in good condition will find that Duo-Roth will pay for itself in savings resulting from increased draft, reduced cleaning, improved operating conditions and smoother, stronger yarns.

6. Duo-Roth is the only double-apron drafting system which does not develop wear of the cage against the apron driving roll. The standard Duo-Roth middle top roll, driving the apron, is built with a stationary arbor. The cage rests against the stationary arbor, eliminating the possibility of cage wear — a common problem with other systems.

7. The knurled and polished surface of the Saco-Lowell Duo-Roth middle top roll creates a positive and uniform drive for the aprons. Since both of the driving bosses are tied together, there is no variation in the speed of the top roll aprons regardless of the bulk of the strand being drafted. There is no slip or hesitation to create unfavorable conditions in the principal drafting zone.

8. The Duo-Roth, with the adjustable cage is extremely flexible. The correct pressure to establish the necessary degree of fibre control for the most efficient drafting can be quickly attained through easy adjustments.

A BROCHURE FULLY DESCRIBING SACO-LOWELL DUO-ROTH IS AVAILABLE ON REQUEST. SACO-LOWELL ENGINEERS WILL ALSO BE GLAD TO ARRANGE A DEMONSTRATION.

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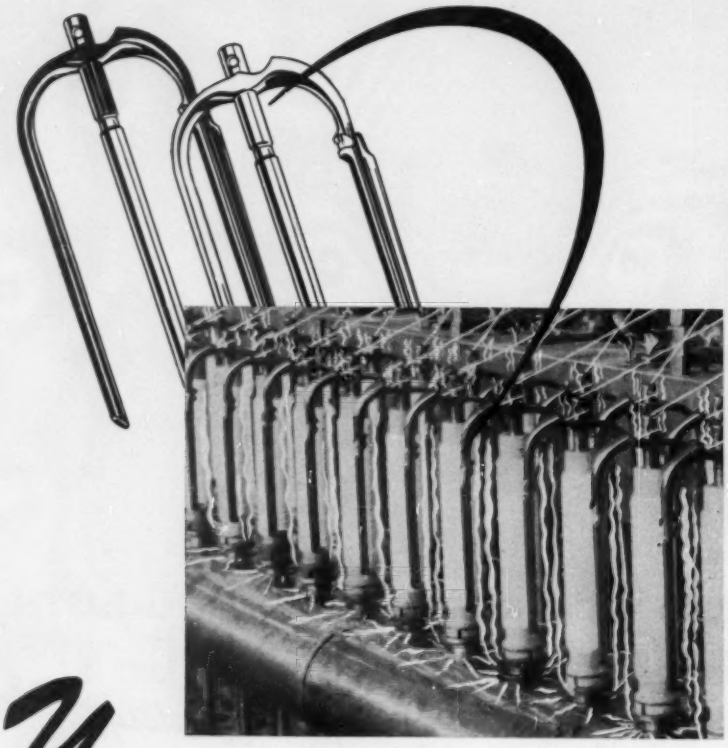

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You get more on the ordinary repair work . . . such as repinning, straightening noses, and rebuilding worn parts . . . because it is done in a shop which has been specializing in such work since 1925. It is done on precision equipment, much of which is not found elsewhere.

In addition you get extras which are seldom obtainable elsewhere. Your flyers are heat tempered to give them extra rigidity. They are balanced by our patented Selecto-Speed process to run smoothly at your own operating speeds. And you get your choice of five superb finishes to meet your particular requirements.

1. **Regular — unpolished**
2. **Rayon Bright — highly polished**
3. **Mirro-Buff — highly buffed for combed and synthetic stocks. Highly tag resistant.**
4. **RCK Black — highly rust resistant**
5. **Ideal Finish — a combination of RCK Black and smooth-as-glass, tag resistant Gold Finish*.**

*Note: Gold Finish is still offered alone, but a new process enables us to apply it with RCK Black at approximately the same price as Gold Finish alone.

Please write for information and prices.

Ideal Machine Shops, Inc., Bessemer City, N. C.

Continuous Service to Textile Mills Since 1925

What the TEXTILE MILLS are doing

two-story brick and steel unit at Buffalo will increase available space at that plant by 5,000 sq ft and permit installation of 2,000 more spinning spindles and complementary preparatory machinery.

Construction of a 10,000 sq ft, one-story addition to **Drayton Mills** in Spartanburg, S. C., is planned to provide space for expansion of the carding department.

The **Amerotron Corp.** worsted mill in Raleigh, N. C., has been sold to **Fred Whitaker Co.** of Philadelphia, Pa. Plans of the new owner for the Raleigh plant call for: (1) doing high temperature dyeing of synthetics, (2) preparing and combing synthetic fibers, (3) selling the looms and piece dyeing equipment, and (4) retaining the spinning plant on the top floor with the possibility of leasing it to another firm. A Whitaker executive emphasized that the only effect this acquisition would have on the company's Philadelphia operation is that one or two departments, primarily dyeing, would be transferred from Philadelphia to Raleigh. * * * A new addition to its Aberdeen, N. C., Division plant now houses the headquarters of Amerotron Corp. Previously headquarters personnel was located in Anderson, S. C.

Production capacity of the finishing plant of **Fairforest Co., Eagle & Phenix Division,** Columbus, Ga., will be increased by approximately 25 per cent when a 5,600 sq ft addition now under construction is completed and equipment installed.

A continuous vat dyeing machine for dyeing yarns to be used in the production of denim fabrics is to be installed at **Erwin (N. C.) Mills, Inc.,** in a 6,500 sq ft addition to the dye plant now under construction.

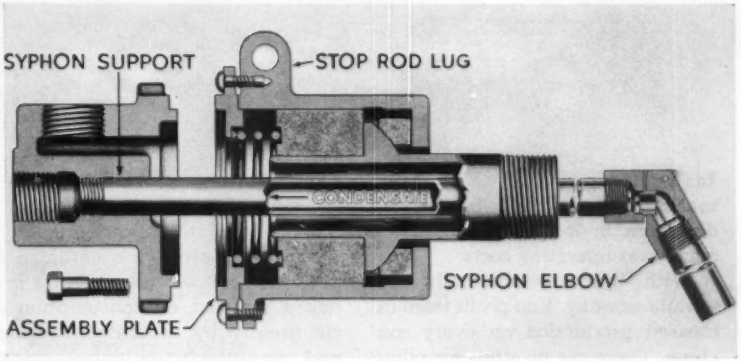
F. C. Huyck & Sons of Rensselaer, N. Y., manufacturers of compressive shrinkage blankets and other fabrics for the textile industry, have announced the taking of an option on a 200-acre site at Aliceville, Ala., on which the company expects to build an ultra-modern, one-story mill, containing about 200,000 sq ft. Huyck operates other mills at Peterborough, N. H., Cavendish, Vt., and Arnprior, Ontario, Canada. Explaining the reason for the project, G. R. Holden,

Try this in your mill for 90 days!

Johnson Syphon Elbow AND THE Johnson Joint

Learn why so many thousands of these new mechanical syphon elbows have already been installed. See right in your own mill how they team up with Johnson Joints to end many of the troubles of ordinary syphon drainage pipes. We'll gladly supply a couple of these combinations for a 90-day trial, and even prepay the shipping charges if you wish. There are no strings to this offer, no obligation to you.

Johnson Syphon Elbows are available in ¼", ⅜", ½", ¾" and 1" sizes. To get full information write, wire or phone us right now.



Type SB 2-P Johnson Rotary Pressure Joints

Johnson Joints make a pefect combination with the new syphon elbow. They are completely packless, self-lubricating and self-adjusting. For this service a special assembly plate is provided to hold internal parts in position when head is removed; complete syphon pipe, including the new elbow, can be removed right through the joint, in many cases while the machine is operating. Picture above shows the complete combination; the other two do not show assembly plates or syphon elbows.

THE JOHNSON CORPORATION

815 WOOD ST., THREE RIVERS, MICH.

Rotary Pressure Joints • Direct Operated Solenoid Valves

THE TEXTILE INDUSTRY *Banks on* BIJUR AUTOMATIC LUBRICATION

In hundreds of mills Bijur Automatic Lubrication is paying big dividends in increased production and lower operating costs.

With Bijur, a machine oils itself —while running. You profit from increased production on every machine. There are no stops for oiling and bearing failures are virtually eliminated.

When your machines are Bijur-equipped, even the most inaccessible bearings get the right amount of filtered oil at the right time.

Your operating costs are cut: oil spots on work are eliminated, personnel injuries are avoided, fire risk is reduced, oil consumption is cut greatly by accurate metering, and you enjoy better housekeeping.

Leading textile mills are banking on Bijur Automatic Lubrication. Let us show you how we can help you do the same.

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Colorful, new bulletin, "From Fibre to Fabric," shows the practical benefits that Bijur Automatic Lubrication offers to the Textile Industry. Write for your copy.

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What the TEXTILE MILLS are doing

company president, said that increased production capacity was needed to keep pace with the growing demand for compressive shrinkage blankets and other fabrics used in the textile industry, and also to provide needed space for new products currently in development. Mr. Holden also observed that with the opening of its Aliceville plant, the company will not only be in a more advantageous position to serve southern mill operators, but also to provide even better service than heretofore to customers in other sections of the country from its Rensselaer plant.

A charter of incorporation has been granted by the state of North Carolina to **Foremost Yarn Mills, Inc.,** Siler City, N. C. Incorporators include R. C. Strickland and Marjorie Strickland of Ramseur, N. C., and John H. Vernon of Burlington.

Arrangements have been made by **Flagg-Utica Corp.** for its subsidiary, **Minneapolis Knitting Works, Inc.,** Utica, N. Y., to impregnate children's knitwear produced there with a durable germicide that has a killing or inhibiting effect on bacteria.

Greenwich Printing & Dyeing Co., Inc., East Greenwich, R. I., has been purchased by Leon Salkind, president of The Smitherman Cotton Mills in North Carolina and Uncas Printing & Finishing Co., Mechanicsville, Conn., which was totally destroyed during the recent flood. A modernization program that includes installation of a continuous bleaching range and one additional printing machine has already been initiated. Paul Fabian, former president of Greenwich, is general manager.

Because of the need for more floor space at the Sparta, N. C., plant of **P. H. Hanes Knitting Co.,** an addition to the present building is being constructed by Alleghany County Development Corp., lessor of the property utilized by Hanes in Sparta.

The women's nylon footsock division of **Janedale Hosiery Mills, Inc.,** in Philadelphia, Pa., has been purchased by **Nylonet Corp.** of Miami, Fla.

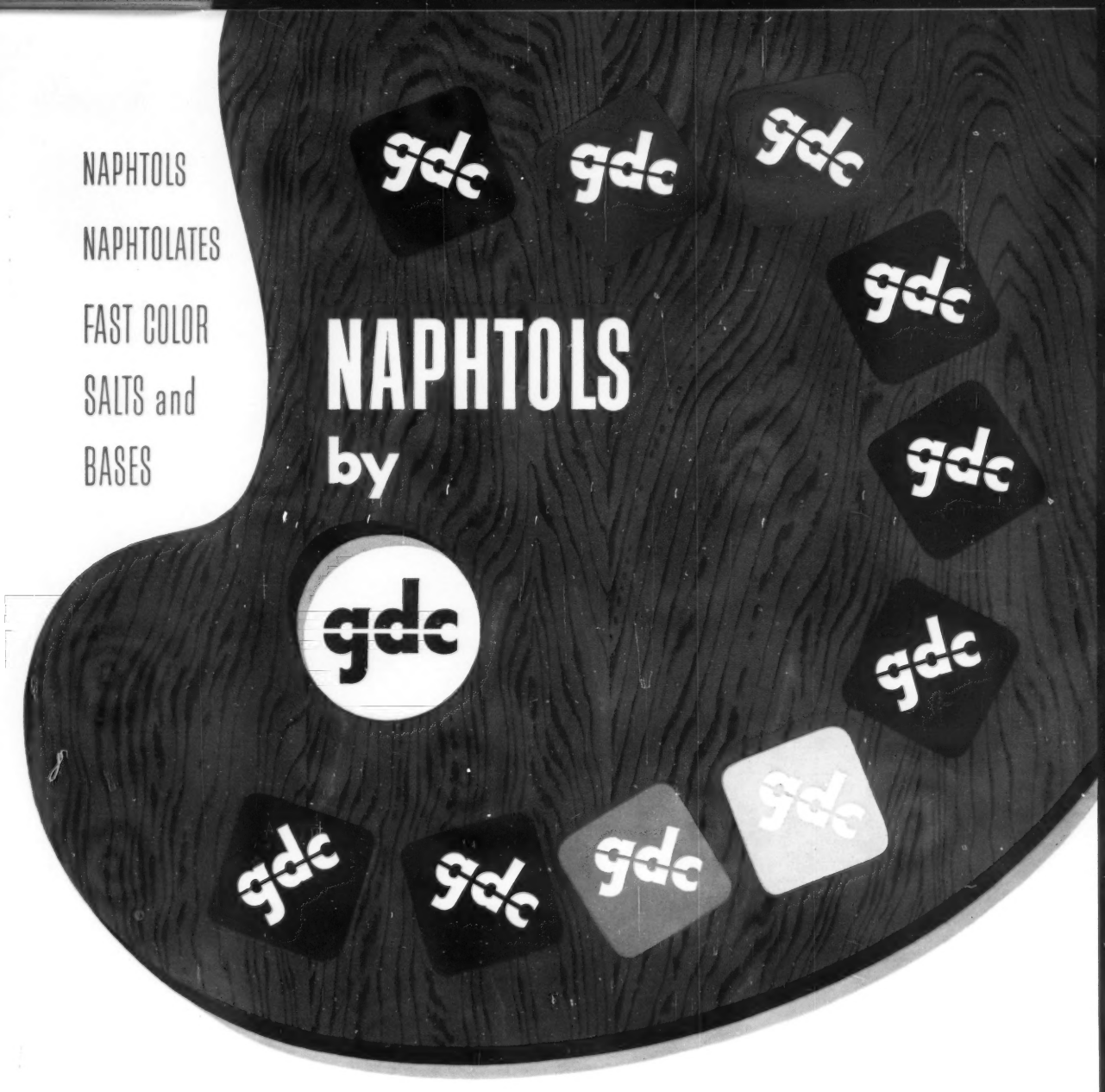
With the licensing of the South American swimwear plant, Confecciones Los Angeles Limitada, Bo-

(Continued on page 40)

NAPHTOLS

NAPHTOLATES

FAST COLOR SALTS and BASES



Colors fast to washing . . . fast to sunlight

Whatever the volume of the dyer or printer—whatever his method—GDC offers the broadest range and the right combination of products to create the whole spectrum of fashion-right shades. These range from bright yellows and reds to rich deep wines, navies and browns. They are dependable allies in meeting today's ever-increasing demand for fast colors.

Years of manufacturing experience and extensive technical resources are continually at work for you—breeding new refinements into our products—creating new benefits to you. The Naphtols, Fast Color Salts and Bases are *now non-dusting* powders. Most of them offer greater ease of solubility and better stability in dyeing and printing, as well as in storage. These are all plus factors. For those who prefer to work with a prepared naphtol solution, we offer liquid Naphtolates.

Supporting every product we offer are the facilities—available to you—of our Technical Service Laboratories. We invite the opportunity to discuss the relative values of Naphtols and Naphtolates, Fast Color Salts and Bases—in terms of your particular requirements.

From Research to Reality

gdc gaf

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A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION

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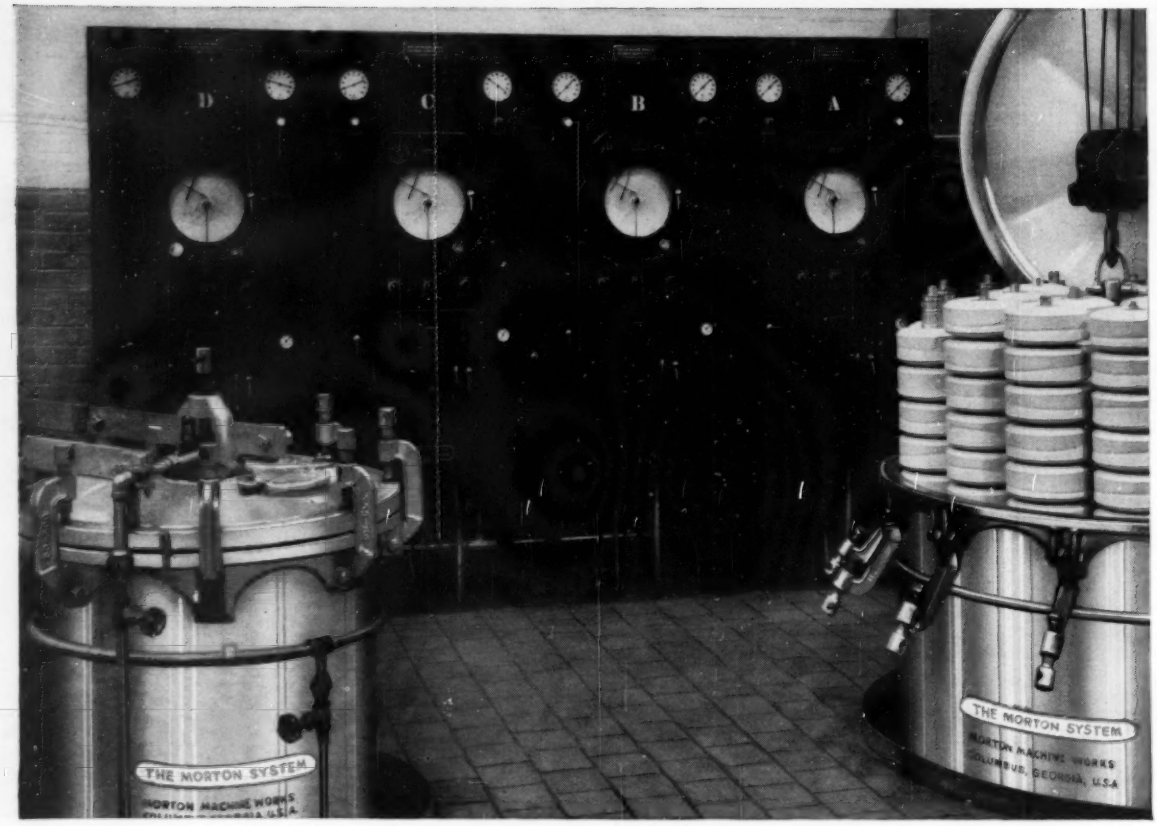
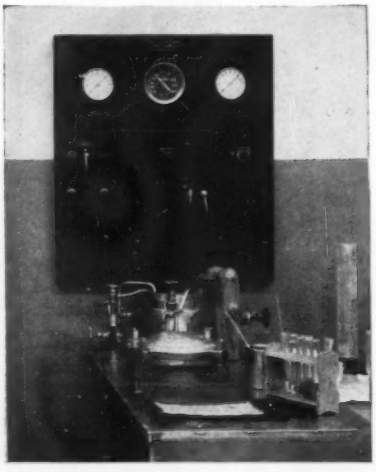


THEY NEVER SAY DYE...

without Taylor controls at Hathaway Manufacturing Co., New Bedford, Mass.



IN THE LAB, as well as on their Morton Machine Company package dyeing machines, they rely on Taylor automatic controls to deliver uniformly high quality at minimum cost. Instruments for each machine are mounted on a Taylor coordinated panel and comprise:

1. A FULSCOPE* Controller with Process Timer for automatic control of temperature and the time of the overall dyeing cycle.

2. A FLEX-O-TIMER* Time-Cycle Controller which operates the dye liquor reversing valve, giving a specific inside-out and outside-in cycle. It precisely times flow reversal, thus assuring greater uniformity.

3. Signal lights which let the operator see at a glance just what part of cycle he's in. They also let him know the direction of flow at any time.

This package dye control system is only one of the many ways you can "beat rising costs with Taylor Accuracy." Whatever dyeing problems you have, we can help you solve them by working out an efficient Taylor Automatic Control System for you. Ask your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N.Y. or Toronto, Canada.

Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

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Taylor Instruments MEAN ACCURACY FIRST

ANNOUNCING!

...A TOTALLY NEW NEEDLE LUBRICANT for fine-gauge full-fashioned and seamless knitting machines

SHELL VEXILLA OIL 117

1. **12 TIMES GREATER RUST PROTECTION** than the best current oils . . . during both operating and shutdown periods.

2. **Eliminates green soap formation,** and minimizes machine oxidation.

3. **Controls nylon size deposits,** and permits easy cleaning during shutdown periods.

4. **Very low surface tension,** resulting in increased wetting and lubrication.

5. **No gummy deposits . . .** contains no fatty acids.

Shell VEXILLA OIL 117 establishes a new set of standards in knitting machine lubrication. Test it in comparison with the oil you are using. Write for further information.

SHELL OIL COMPANY
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SHELL

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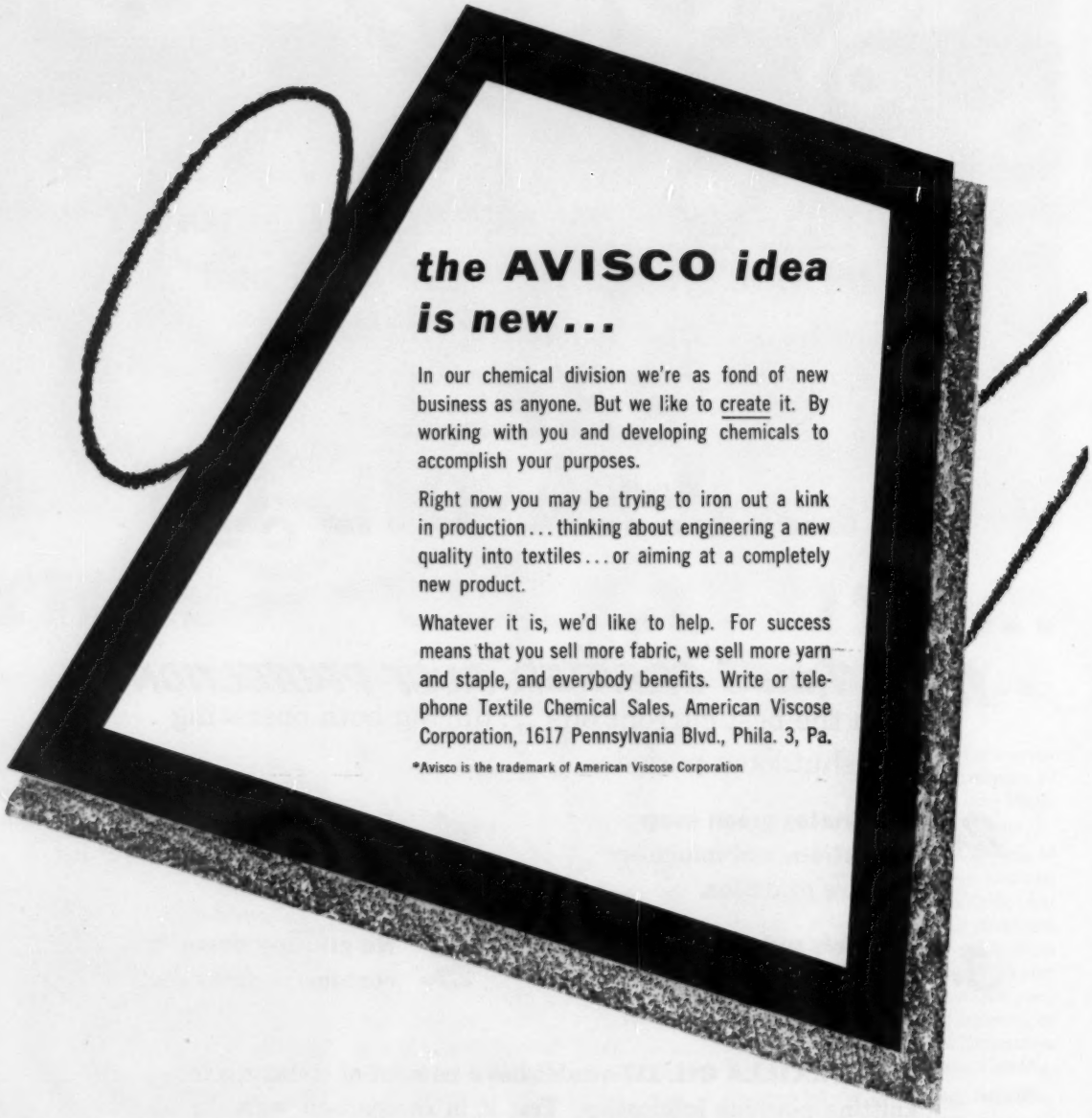

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In our chemical division we're as fond of new business as anyone. But we like to create it. By working with you and developing chemicals to accomplish your purposes.

Right now you may be trying to iron out a kink in production... thinking about engineering a new quality into textiles... or aiming at a completely new product.

Whatever it is, we'd like to help. For success means that you sell more fabric, we sell more yarn and staple, and everybody benefits. Write or telephone Textile Chemical Sales, American Viscose Corporation, 1617 Pennsylvania Blvd., Phila. 3, Pa.

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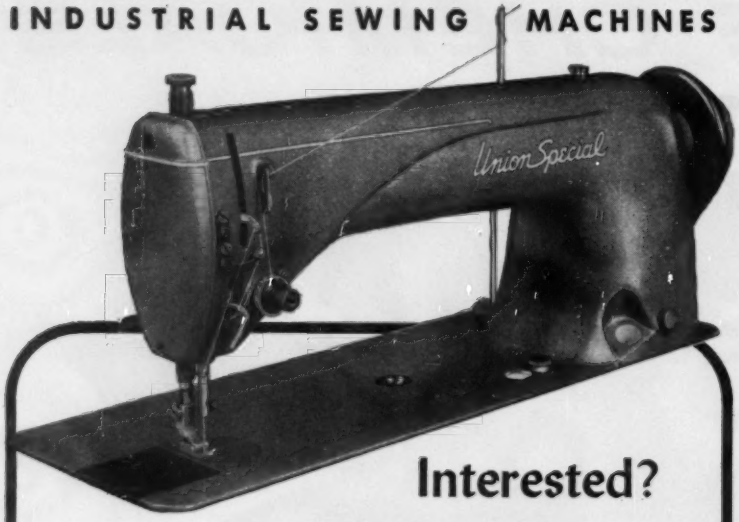
AVISCO*

TEXTILE CHEMICALS

For further information use Handy Return Card, Page 205

Union Special®

INDUSTRIAL SEWING MACHINES



Interested?

Helpful, informative bulletins on the manufacture of many machine sewed products are available to readers without obligation. If you are interested, let us know and we will send bulletins requested to you.

BULLETIN NO. 250 "The Manufacture of Men's Dress and Sport Shirts" — Profusely illustrated 6-page folder describing the most efficient way to manufacture men's shirts. Includes keyed diagram of sewing operations plus drawings of seams and stitches.

BULLETIN NO. 251 "Sewing Operations on Service Garments"—Informative listings of recommended equipment for making service uniform shirts and pants. Lists sequence of operations and stitch and seam types.

BULLETIN NO. 252 "Production of Men's and Boys' Shorts and Pajamas"—Bulletin illustrates and describes machines recommended for making woven shorts and pajamas. Contains information on Union Special's Elastic Metering Device.

BULLETIN NO. 253 "Manufacturing Overalls, Coveralls, Dungarees, and Westerns"—Six page, illustrated folder describing machines found to be best for this type of production. Simple diagram shows operations involved and back cover shows seam and stitch types used.

BULLETIN NO. 255 "Producing Ladies' Undergarments and Nightwear"—New Union Special bulletin analyzes a variety of designs and presents newest machines recommended for operations on women's slips, panties, and nightwear.

BULLETIN NO. 260 "How to Make Work Gloves"—Six-page folder describes and illustrates machines recommended for work glove manufacture, with illustrated explanation of different seam and finish constructions.

BULLETIN NO. 262 "How to Make Bags"—Economical and efficient production of burlap, jute, and multiwall paper bags is outlined in this folder, with photos of actual seam samples included. Helpful guide chart shows immediately the right machine for any bag manufacturing job.

BULLETIN NO. 263 "Tailoring Men's Clothing"—The art of tailoring men's clothing is described in this brochure. Machine illustrations are accompanied by actual seam sample photos.

BULLETIN NO. 265 "Sewing Women's Wear"—Eight-page bulletin gives a listing of machines recommended for women's outerwear production and samples of the work produced are shown.

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Gentlemen:
Without obligation to me, please send me the bulletins checked.

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Name_____

Company_____

Address_____

What the TEXTILE MILLS are doing

(Continued from page 34)

gota, Colombia, **Jantzen, Inc.,** is now engaged in 18 foreign operations. The Colombian plant will produce designs featured in Jantzen's 1956 swim and sun collection with all of the merchandise to bear the Jantzen label and hang tag.

Kent Knitting Mills, Inc., Norwalk, Conn., is a new firm whose officers are: Bernard Hellman, president; Murray Beldock, secretary; and Albert Kessler, vice-president and treasurer.

M. Lowenstein & Sons have acquired **Covington (Ga.) Mills** and **Spofford Mills, Inc.,** Wilmington, N. C. Commenting on this most recent purchase, Leon Lowenstein, chairman, said: "This will give us additional productive facilities in fine quality fabrics and will further enable us to increase our finished goods business in our better fabrics division."

A 300-acre site near Landrum, S. C., has been selected for a new textile mill expected to be known as **Landrum Mills.** Employment of about 300 persons in the 200,000 sq ft plant is anticipated.

The mill in West Gloucester, R. I., formerly known as **D. & M. Woolen Mills,** has been purchased by a new company, **Manunganaug Mills,** and is now in full production weaving woolens on commission. Job R. Steere, formerly superintendent of Stillwater Worsted Mills at Mapleville, is president and Erich Schmidt is treasurer.

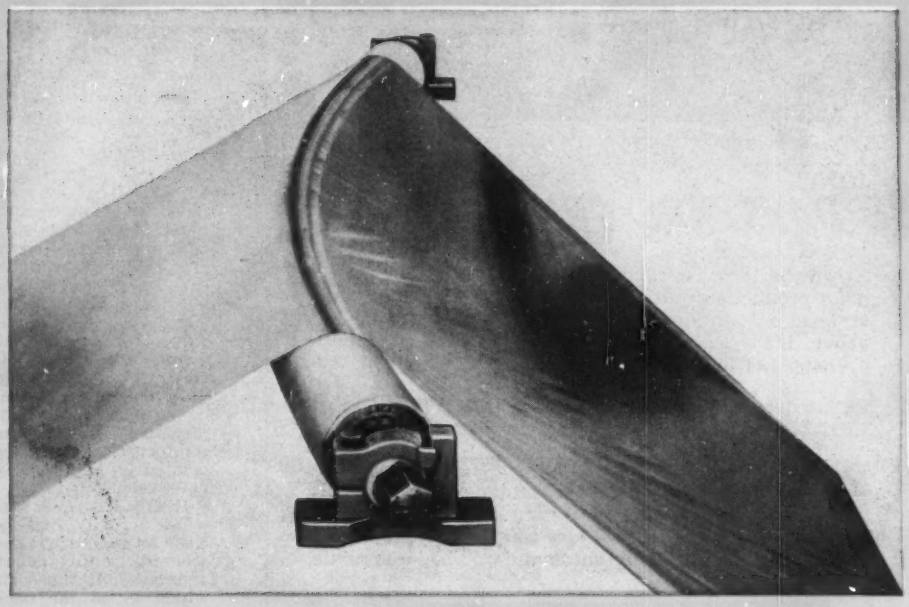
Splash, ratine, nub, and boucle yarns are being produced by **Novelty Yarns Corp.,** a new textile firm with 14 novelty twisters operating in the building of Tryon (N. C.) Processing Co. Officers of the North Carolina corporation are: president and treasurer, Joe L. Smith; vice-president and general manager, Melvin Strum; secretary, Floyd Isom; assistant secretary-treasurer, Dorothy C. Caldwell.

Four more printing machines were recently installed in a 14,700 sq ft addition to the finishing plant of the **Lyman (S. C.) Division of Pacific Mills,** bringing the total to 20. More water for the expanded operation was obtained by constructing a dam

Mount Hope SYSTEM

INCORPORATES

"Free Wheeling" Expanders TO HELP YOU BEAT COMPETITION!



THE MOUNT HOPE "FREE WHEELING" EXPANDER holds your fabric to full width and free of wrinkles.

For Maximum Production—Lower Cost—Minimum Seconds—USE the Complete MOUNT HOPE SYSTEM

Write for a Production Cost Survey of your plant.

Another Service To You!

New Mount Hope **Southern** Repair Shop to give you fast, convenient service.

Originator of Modern Expanders • Leader in Cloth, Paper and Plastic Handling

SOUTHERN REPAIR SHOP • CHARLOTTE, N. C.

MOUNT HOPE MACHINERY COMPANY

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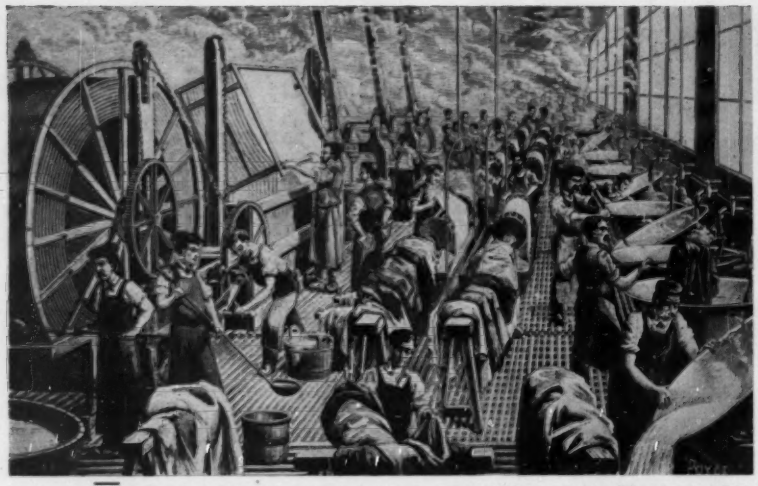


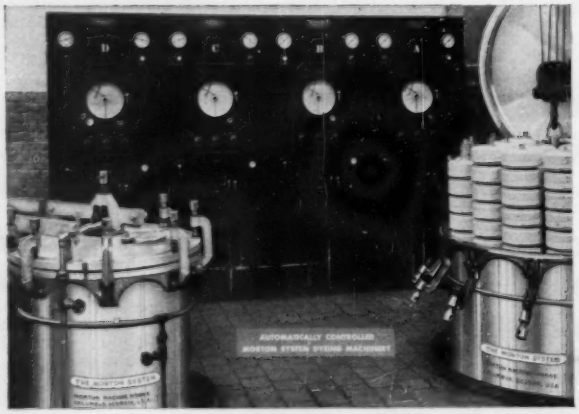
Dyeing Establishment, latter part of 19th century, Woodcut, 1885

"THOSE DAYS ARE GONE FOREVER!"

As late as 1885, Dyehouses had begun to get the idea of mass production, but it was still pretty much of a hit or miss proposition as one may see from the woodcut above. It's a great contrast to the efficient, automatic dyehouses of today.

Pictured below is a MORTON SYSTEM DYEING MACHINERY installation which is controlled automatically.

The MORTON MASTER DYER controls temperature with rate of rise and records—Directional flow of liquid and time cycle records—Indicating lights and warning signals—Pressure gasses—Flow control—Pump switch. It may be operated fully automatic or semi-automatic.



THE MORTON SYSTEM DYEING MACHINERY

MORTON

MACHINE WORKS, INC.

COLUMBUS, GEORGIA U. S. A.

What the TEXTILE MILLS are doing

across the Middle Tyger River to provide a 515-acre reservoir of water.

Pleasant Valley (N. Y.) Finishing Co. is planning the construction of a half-million-dollar addition to the present plant, with the expectation of doubling finishing capacity.

Could you live by your bare hands? That was the thought-provoking question posed on the back cover of a recent issue of "Textiles Review," employee publication of **Textiles-Incorporated** of Gastonia, N. C. Here is the message from management which accompanied the query:

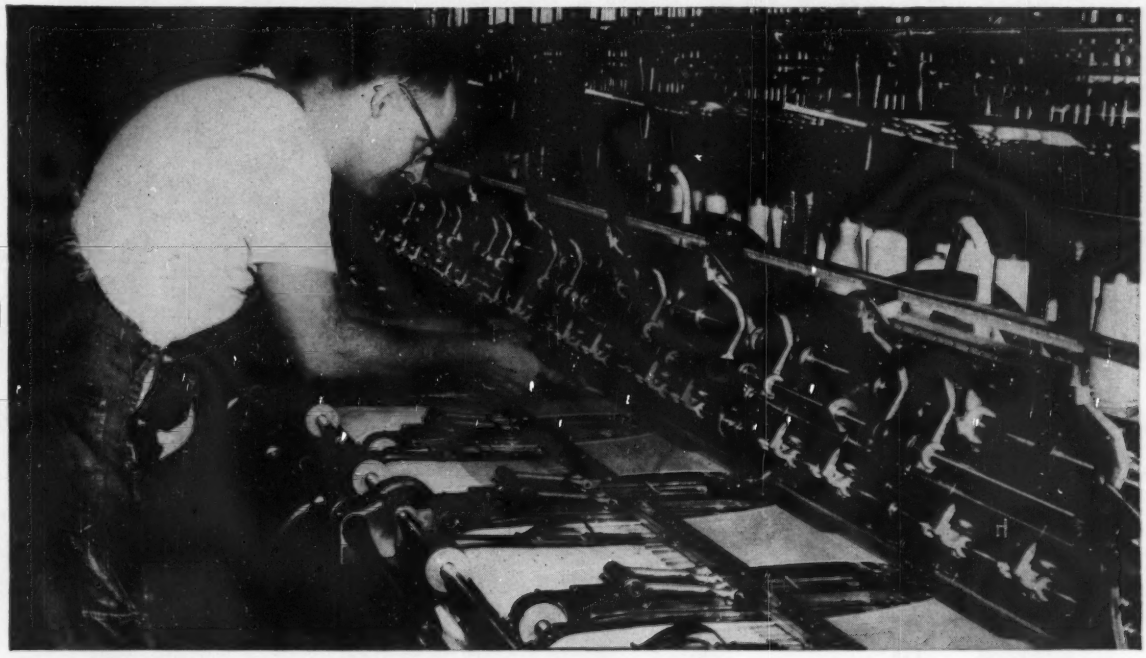
> Even today, in many parts of the world, men struggle to live by what they can produce with their hands and a few common tools. If we were in the same boat, we'd find unemployment no problem. Even young children would have to work. And no matter what the government might do—such as changing the value of money so that workers would be earning $100 a day—we'd all still be drudging for a bare existence if we had no modern production tools and machines. Life's necessities, comforts and luxuries cannot be printed on paper; they have to be produced.
>
> Real earnings — representing what actually can be bought with an hour's work—have increased in this country three and one-half times since 1890, which is as far back as the records go. These great gains were possible only because of the development of better machines and better methods. No kind of pressure on government for more "purchasing power" could have brought about an increase of 350 per cent in the living standards of industrial employees. Real earnings increased in proportion to the worker's ability to produce more—with improved machines.

A significant step in the extensive modernization of **Wamsutta Mills,** New Bedford, Mass., was the recent purchase by Wamsutta of a large portion of the cotton preparatory equipment of the **Lockwood-Dutchess, Inc.,** plant in Waterville, Me. Included in the machinery acquired were 154 late model cards and 20,478 spinning spindles which had recently been completely renovated.

Westerly (R. I.) Woolen Co. is now in operation. The mill is located in the former Swift River Woolen Mills buildings which were bought last

(Continued on page 46)

Gulftex Oil is applied to the needles of the full-fashioned hosiery knitting machines at the Virginia Maid Mill with a plastic squeeze bottle.



"We reduced needle breakage with GULFTEX OIL"

says Mr. Earl S. Gress, Superintendent,
Virginia Maid Hosiery Mill, Inc., Pulaski, Va.

"During the two years we have been using Gulftex Oil in our knitting machines we have noticed that needle breakage is down considerably, and needles stay clean—free from gum deposits and rust," says Mr. Gress. "Needless to say, we have increased output and reduced maintenance costs."

In addition to the many fine qualities that Mr. Gress has found to be so important, Gulftex Oil has superior non-staining characteristics which make it a valuable lubricant for any application where the staining of fabrics is a problem.

So if you feel that your needle lubricant is not doing the best possible job, call in a Gulf Sales Engineer and have him demonstrate the advantages of Gulftex Oil in your mill. You can contact him today at your nearest Gulf office.

Gulf Oil Corporation · Gulf Refining Company
1822 Gulf Building, Pittsburgh 30, Pa.

GULF

THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

YOU FURNISH THE PRINT, WE'LL FURNISH THE PART

TEXTILE BOBBINS OF SYNTHANE LAMINATED PLASTIC ARE KIND TO DELICATE SYNTHETIC YARNS

In the textile industry *Synthane* laminated plastic has many uses because it supplies many properties in combination. Take this bobbin, for example. It has to be hard, smooth, non-snagging, light in weight, dimensionally stable, and tough. Made from *Synthane*, it has all of these advantages.

Synthane is hard and finishes to a super-smoothness that doesn't snag fine yarns. Because *Synthane* is light in weight, the bobbin has low inertia—starts and stops easily—cuts down wear and maintenance. And because *Synthane* is chemically-resistant it is of value in dyeing and finishing processes.

Synthane bobbins are also mechanically strong; highly resistant to breakage. So you can see why they are widely used throughout the textile industry. Other uses for *Synthane* include hosiery turning and examining forms, non-snagging redraw caps, textile rollers, headless package tubes, and precision-built pirns.

Have you a part that requires *Synthane?* Then why not mail the coupon for the *Synthane* catalog; it tells the whole story of the many grades of *Synthane* sheets, rods, tubes, moldings and completely fabricated parts.

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Please rush me a copy of the Synthane catalog.

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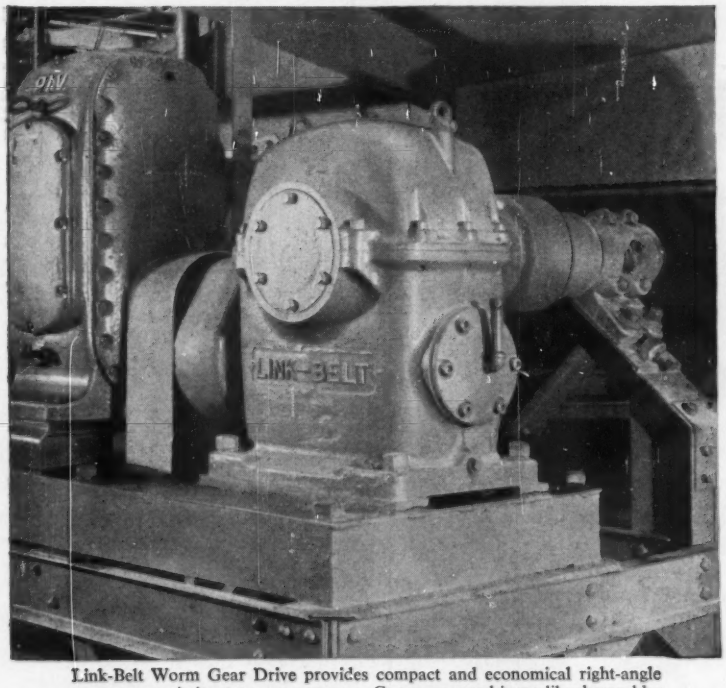
SYNTHANE
LAMINATED PLASTIC

SYNTHANE CORPORATION, 9 RIVER ROAD, OAKS, PENNSYLVANIA

Here's real versatility! LINK-BELT offers you

19 VARIATIONS in WORM GEAR DRIVES



Link-Belt Worm Gear Drive provides compact and economical right-angle power transmission to apron conveyor. Conveyor speed is readily changed by P.I.V. Variable Speed Drive to suit operating conditions.

Meet specific needs from industry's most comprehensive line.

WHATEVER the need . . . whatever the speed — Link-Belt Worm Gear Drives can meet your requirements for simple, compact, fixed-ratio speed reduction. With them, you can change the direction and velocity of power . . . match high motor speeds to modern production needs with the least power loss, best possible balance of torque and horsepower ratings.

Choose from a wide selection for fractional or large horsepower requirements. Available with horizontal and vertical housings to permit convenient connections to prime movers and driven machinery.

Single-Worm Gear Drives in ratios from 3.1:1 to 100:1 with output capacities to 97.9 hp.

Helical-Worm Gear Drives in ratios from 26:1 to 540:1 — output capacities to 56.7 hp.

Double-Worm Gear Drives in ratios from 26:1 to 8000:1 — output capacities up to 26 hp and 124,000 inch-pounds torque.

8 of 19 types in the broad Link-Belt line

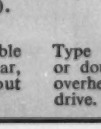
Type WB—Single reduction, worm below gear, horizontal output shaft.

Type HWB—Helical gear first reduction, worm gear final reduction. Worm below gear, horizontal output shaft.

Type DWB—Double worm reduction gear, horizontal output shaft.

Type WVS—Single reduction, worm on top of gear, horizontal shaft with screw conveyor flange.

Type WV—Single reduction, vertical output shaft (up or down).



Type WVT—Single or double reduction overhead conveyor drive.

Type HWV—Helical gear first reduction, worm gear final reduction. Vertical output shaft (up or down).

Type DWV—Double worm reduction gear, vertical output shaft (up or down).

For full information, consult your local Link-Belt office or authorized stock-carrying distributor. Or write today for Book 2324-A.

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LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 13,945

What the TEXTILE MILLS are doing

(Continued from page 42)

summer by Miss Helen Cotrell who is president of the new company. Nicolas Cotrell is vice-president and treasurer. Mark Quinn and William Hopwood, both of whom were with Swift River Woolen, are general manager and superintendent, respectively.

A. H. Rice Co., Pittsfield, Mass., thread manufacturer, is building a two-story addition to the present plant.

The **Rhode Island Textile Co.**, Pawtucket, R. I., recently purchased a vacant lot adjoining the present site for eventual expansion.

Construction of a five-story, $1.5 million storage building is planned by **Rock Hill (S. C.) Printing & Finishing Co.**, a division of M. Lowenstein & Sons.

Fifty per cent increase in production capacity of the bleachery at **Russell Mfg. Co.** in Alexander City, Ala., will be provided when new equipment now being installed is ready for operation.

Joe L. Moore Co., Inc., of Gadsden, Ala., has purchased the following Mississippi cotton mills belonging to the estate of the late R. D. Sanders: **Apponaug Mfg. Co.** Mills No. 1 and 2 at Kosciusko and West Point, and **Magnolia (Miss.) Textiles, Inc.**

"75 Years of Progress in the Valley" was the theme of the week-long seventy-fifth anniversary celebration of the establishment of **West Point (Ga.) Mfg. Co.** Beginning on Sunday, October 9, with recognition in the local churches in the form of musical programs, the community activities during the week included: Monday—an all-night gospel sing; Tuesday—Merchants Day, featuring anniversary sales in the local stores with displays in the store windows of finished and end-use products manufactured by West Point and its subsidiaries; Wednesday—a documentary dramatization of "The West Point Story" over a local radio station; Thursday—luncheon for civic clubs followed by tour of new Lantuck Division building and, in the evening, a band concert followed by a mammoth fireworks display; Friday—high school football game with preview of some of the floats to appear in the parade on Saturday; Saturday—parade of industrial, business, and civic floats which depicted "Living and Working in the Valley" and, in the evening, a square dance and Maid of Cotton Ball.

from TEXTILE INDUSTRIES'

Editorial,

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Represer.tatives

NON-FLUID OIL

TRADE MARK REGISTERED

CLEAN WEAVING!

NON-FLUID OIL—the lubricant-leader in textiles—assures *clean* loom operation. Spattering ordinary oils damage goods in process—while NON-FLUID OIL *stays* where applied and keeps off yarn and cloth.

NON-FLUID OIL gives *constant* protection against oil-spot loss to 7 out of 10 leading mills. Besides providing clean, better lubrication, NON-FLUID OIL keeps costs down by outlasting ordinary oils 3 to 5 times.

For general oiling of looms, A-No. 00000 Grade NON-FLUID OIL is recommended. Write for free testing sample and useful Bulletin. Proof is in performance.

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NEW YORK & NEW JERSEY LUBRICANT COMPANY

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Works: Newark, N. J.—Warehouses and representatives in principal industrial centers

Please send me, without obligation, a free testing sample of NON-FLUID OIL.

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TYPE OF MACHINERY_____

AlSiMag® 193 conductive

GROOVED EYELETS with Wire Retainer Clips

- CLEANER, EASIER WAY TO ASSEMBLE INTO FRAMES
- NO CEMENT NEEDED
- FORMS CONDUCTIVE PATH NOT INSULATED WITH CEMENT
- CONDUCTIVE GUIDE PLUS CONDUCTIVE CLIP HELPS CONTROL STATIC
- HARD MATERIAL NOTED FOR EXTRA LONG LIFE

AlSiMag 193 is an extremely hard material of proven durability. Conducts electricity, helps control static. Parts can also be produced in: (1) AlSiMag 192—similar to AlSiMag 193 except non-conductive; (2) AlSiMag 513—hardest material of all, especially valuable where excessive wear is experienced.

Illustrations approximately actual size. Any other style or size guide can be custom made to your specifications. Wire clips shown are optional at reasonable extra cost and are packed separately.

FREE SAMPLES ON REQUEST

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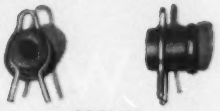
GE-14507



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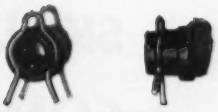

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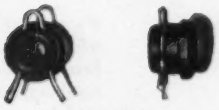

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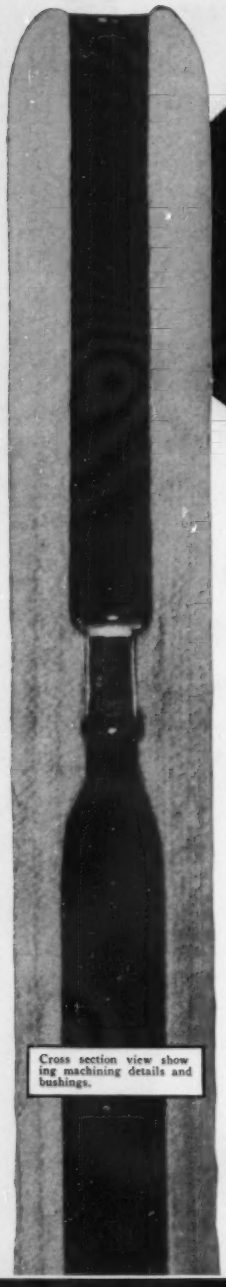
These clips fit any of the eight standard AlSiMag Guides illustrated.

Wire Retainer Clips



Cross section view showing machining details and bushings.

YOU FIND WHAT YOU WANT IN THIS BOBBIN

★ **LONGER LIFE**

★ **TRUE, FREE-RUNNING**

★ **BUILT-IN BRASS BUSHINGS**

★ **SKILLED WORKMANSHIP**

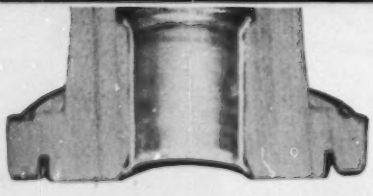
★ **COMPETITIVE PRICE**

It's not just one feature—but a combination of fine features—that makes VERMONT bobbins your best bobbin value. The uniquely crimped brass bushings prevent time loss, even at high speeds . . . so that there's no drag, no pull! Made of hard rock maple, the bobbins are kiln-dried and lacquered by a special process for even greater protection. Vermont spools and bobbins—with their superior features—guarantee you long, trouble-free usefulness.

Contact your nearest VERMONT SPOOL & BOBBIN representative. He can explain to you how easily and inexpensively you can have your specific needs filled to order . . . to your exact requirements.

Vermont SPOOL AND BOBBIN CO.

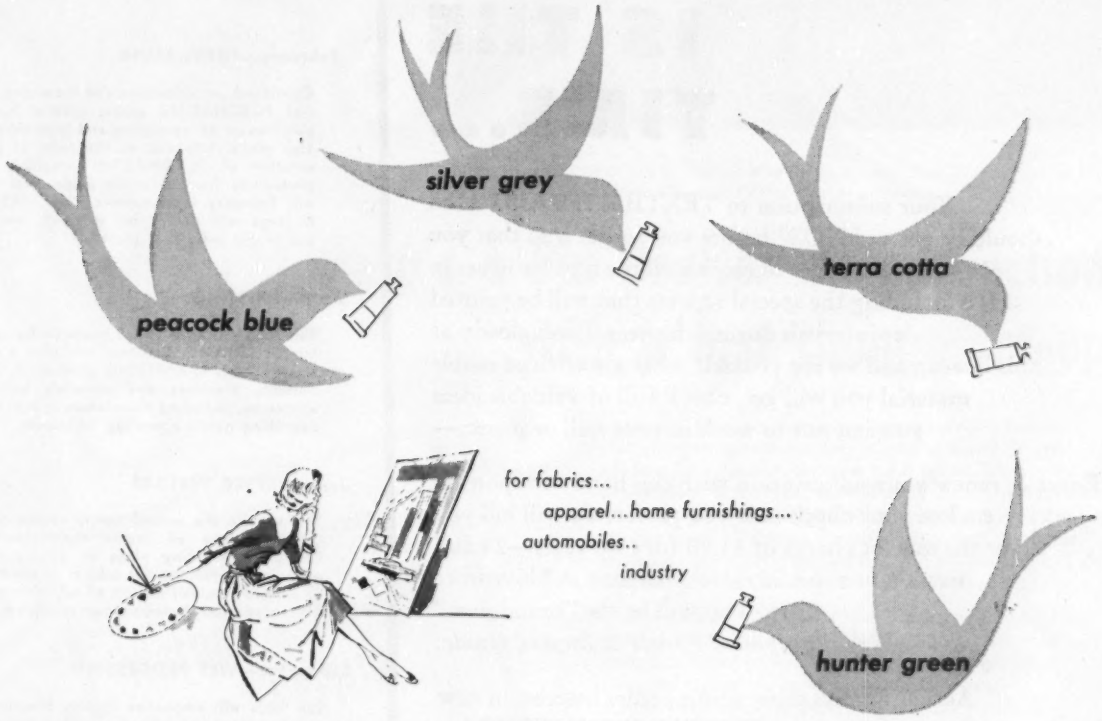
234 SO. CHAMPLAIN ST. — BURLINGTON, VERMONT — *SUPERIOR SPOOLS AND BOBBINS SINCE 1906*



Represented in the East by
Atkinson, Haserick & Co., Boston 6, Mass.
and Watson & Desmond, P. O. Box 1954, Charlotte, N. C.

color unlimited!

...as 5 new, easy-blending colors appear in superfast Coloray



The arrival of these five glorious colors brings the basic range in Coloray to 19 colors! And skyrockets the number of possible new color effects way over the more-than-2,000 colors already created.

For Coloray colors are not only phenomenally *colorfast*, but remarkably *blendable*. What *new* categories of color can now be blended? A brilliant range of blues . . . clean-cut, clear as jewels. A gamut of greys that are true solids. A rich range of dark greens. A larger, *livelier* family of tans-rusts-browns.

All Coloray colors enjoy spectacular ratings for fastness. Sun-fastness. Wash-fastness. Fastness to perspiration, cleaning, air fumes. Because—the color is caged deep in the fiber. That's why Coloray color is also richer, glowier, *lovelier* than ordinary color.

Courtaulds' rayon fiber with Captive Color..."can't escape!"

COLORAY.

For further information, write:

COURTAULDS (ALABAMA) INC., *first name in man-made fibers, first name in solution-dyeing*
600 FIFTH AVENUE, NEW YORK 20 • Greensboro, N. C. • Le Moyne Plant, Mobile, Ala.

THIS IS THE TIME...

Your subscription to TEXTILE INDUSTRIES should be entered NOW before you forget it so that you will be sure to receive all the regular issues in 1956 including the special reports that will be printed at intervals during the year. Look closely at this line-up and see for yourself what a wealth of usable material you will get, chock full of valuable ideas you can put to work in your mill or plant:—

Enter or renew your subscription with this handy coupon . . . enclose your check or if you prefer, we will bill you for the modest charge of $3.00 for two years—24 full issues *plus* a special extra 13th issue in November 1956. This will be the "brand new" *New Equipment Parade & Buyers' Guide.*

Actual surveys show prime reader interest in new equipment and processes. TEXTILE INDUSTRIES has featured new equipment regularly and was the first textile publication to consolidate this information in an annual review. Beginning September, 1955 the *New Equipment Parade Section* was started in regular issues.

For 1956, the annual review will be consolidated with a completely new Buyers' Guide in a 13th Issue November 20th.

February—PURCHASING

Continued consolidations and increasing central PURCHASING places greater responsibilities on all executives and supervisors. It also places emphasis on the need of presentation of PURCHASING practices and procedures from a textile angle. Not only will February issue explore PURCHASING in large mill groups but in small, average and larger individual plants.

April—KNITTING

This issue will have added pages in the regular KNITTING section that will give a special emphasis to KNITTING production. New methods, machines and materials will be written up, including experiences of mill men describing actual operating techniques.

June—TUFTED TEXTILES

This will be the second annual review of a growing phase of textile manufacturing. Changes are taking place so quickly that extra information on this subject is essential to all mill men. All aspects of tufted textiles will be covered, including merchandising.

September—WET PROCESSING

This issue will emphasize dyeing, bleaching, and finishing and will give added impetus to the constant search for improvements. TEXTILE INDUSTRIES carries regularly more material on all WET PROCESSING than does any other general textile publication.

October—SOUTHERN TEXTILE EXPOSITION NUMBER

TEXTILE INDUSTRIES has been closely connected with the Southern Textile Exposition since the first show. This issue will carry advance news on the 19th Exposition at Greenville, S. C., October 1-5. It will also carry the directory of exhibits and exhibitors to help readers plan their time at the show most effectively.

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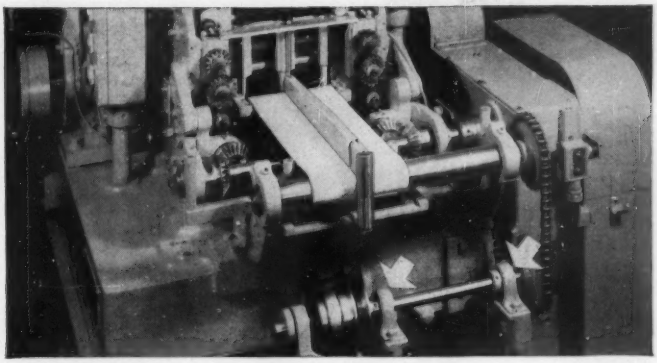

INFEED SECTION of Warner & Swasey Pin Drafter... using Fafnir PB type Pillow Blocks as indicated.

Here's a Pin Drafter Infeed Section with a fast change set-up

Partners in Progress

Warner & Swasey ...FAFNIR

Changing from apron to stationary infeed plate or vice versa in minimum time is one of many design advantages found in the new high speed, high production WARNER & SWASEY SINGLE HEAD, SINGLE OR DUAL DELIVERY PIN DRAFTER. It's the result of design simplification that embodies *the new Fafnir PB type ball bearing pillow block.* Two of these bearings are installed on the infeed shaft.

The Fafnir PB Type Pillow Block has a two-piece, pressed steel housing . . . a Fafnir wide inner ring type, precision bearing with eccentric cam design inner ring and collar for positive, simple locking action. Patented Plya-Seals retain factory-packed lubricant, exclude contaminants. Self-alignment of bearing in all directions during assembly saves time. Compact size saves space.

By collaborating with textile machinery designers for many years, Fafnir has accumulated a fund of knowledge and experience. These important assets are used in the process of developing new and better applications for ball bearings as well as in designing new products. Perhaps they can help you achieve product improvements. Write The Fafnir Bearing Company, New Britain, Conn.

FAFNIR PB TYPE Ball Bearing Pillow Block

FAFNIR
BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

For further information use Handy Return Card, Page 205

Truck rolls over...

Crush proof container. Here's the Gair container that brought White Echo depth sounders through truck smash-up without a scratch.

but Gair containers save fragile electronic depth sounders!

These are the facts — straight from Tom Crotty, factory manager, Wilfrid O. White & Sons, Inc., Boston manufacturer of navigational instruments:

"Nineteen White Echo depth sounders, packed individually in Gair-designed containers, were ticketed for anxious customers in New York. The truck was involved in a serious accident. Most of the cargo was a complete loss and we figured our instruments were damaged beyond use.

"Upon return of the shipment we found that although some of the containers were crushed, the liners had prevented even the slightest damage to the sounders. Electronic tests showed each instrument in perfect operating condition."

Your product can have the same protection that saved these fragile instruments. Write your nearest Gair Container plant to find out how.

YOU'RE LIVING NEXT DOOR TO THE EXPERT

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ONE OF MANY FIFTH AVENUE WINDOW DISPLAYS

Here's what Arnold Constable says: "We think HYDRO-PRUF is WONDERFUL!"

Arnold Constable's fashion show proudly presented a wide variety of fashions in silks, satins, corduroys, woolens, velvets, cottons and synthetics . . . all presented as better values because of Hydro-Pruf "the fabulous fashion fabric finish."

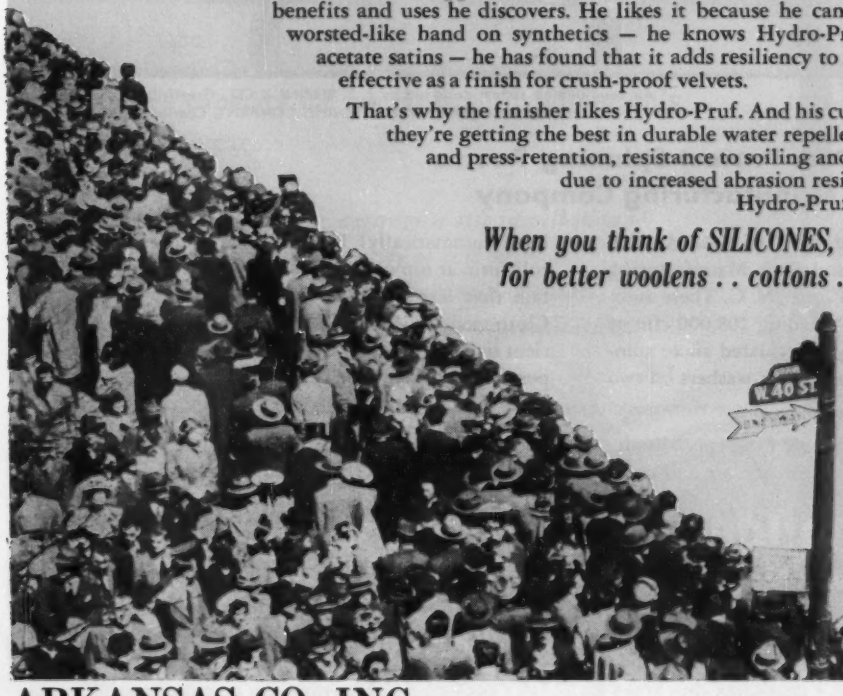
Arnold Constable has taken the Fifth Avenue lead with a national advertising and publicity program on Hydro-Pruf, backed up by their branch outlets with window displays, local advertising and publicity and departmental displays. Their buyers are going into the market specifying Hydro-Pruf. Fashion-wise Fifth Avenue demands HYDRO-PRUF!

What does the FINISHER think of HYDRO-PRUF?

Many finishers have worked with Hydro-Pruf for so long that they take for granted its wonderful ease of application. The more a finisher works with Hydro-Pruf, the more benefits and uses he discovers. He likes it because he can produce a very desirable worsted-like hand on synthetics — he knows Hydro-Pruf will not mark off on acetate satins — he has found that it adds resiliency to all fabrics and is especially effective as a finish for crush-proof velvets.

That's why the finisher likes Hydro-Pruf. And his customers like it too, because they're getting the best in durable water repellency, superior shape, drape and press-retention, resistance to soiling and spotting, longer wear-life due to increased abrasion resistance and stronger seams. Hydro-Pruf truly upgrades all fabrics.

When you think of SILICONES, think of HYDRO-PRUF for better woolens . . cottons . . synthetics . . blends.



Get on the **HYDRO-PRUF** bandwagon now!

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Water Repellent
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Air conditioning system designed by J. E. SIRRINE & CO., Greenville, North Carolina.
Installed by AMERICAN MOISTENING COMPANY, Charlotte, North Carolina.

Auto-AIRMAT Filters Protect Spinning Rooms At Highland Park Manufacturing Company

Lint and dirt meet a "solid wall" of AAF AUTO-AIRMAT filters at Highland Park Manufacturing Company's Mill No. 1, Charlotte, N. C. These automatic, self-cleaning filters—cleaning 108,000 cfm of both outside intake air and re-circulated air to spinning rooms — are protecting the air washers on two air conditioning systems.

The AUTO-AIRMAT is the *only* filter specially designed to remove lint fibers from the air and clean itself automatically! The Airmat media, installed in roll form at top of unit, becomes a moving filter curtain that is re-rolled at bottom with its lint load. Clean media is introduced automatically only in sufficient quantity to keep resistance at proper level. Disposal of collected lint is no problem—it's wrapped up in a handy roll.

For complete information, call your local AAF representative, or write direct for Bulletin 234.

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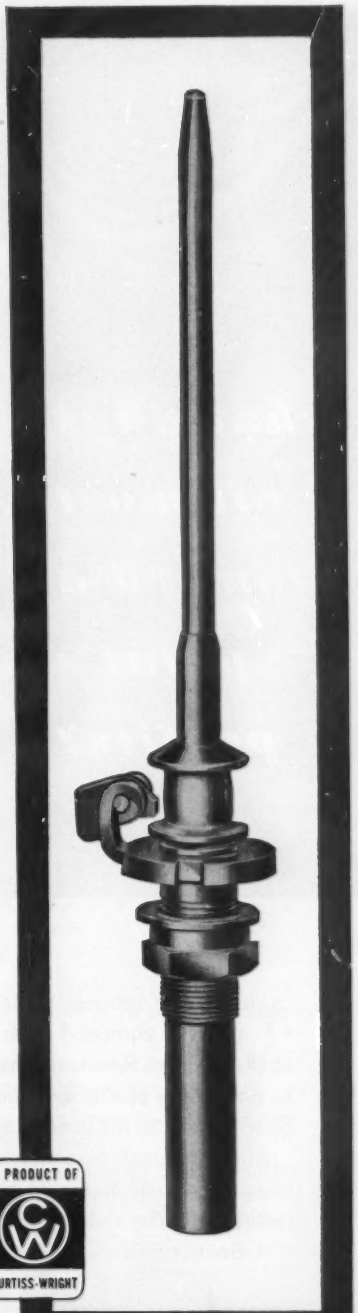
COMPANY, INC.

American Air Filter of Canada, Ltd., Montreal, P. Q. • 275 Central Avenue, Louisville 8, Kentucky

NEW Marquette TOP DRIVE FILLING SPINDLE



- Exclusive full-floating footstep bearing minimizes vibration, permitting high speed operation.
- Hardened steel blade.
- All-steel bolster.
- Large capacity oil reservoir needs filling only once a year.

We'll be glad to arrange a test installation to prove the superiority of this new Marquette Spindle in your mill. Contact our home office or one of our representatives.

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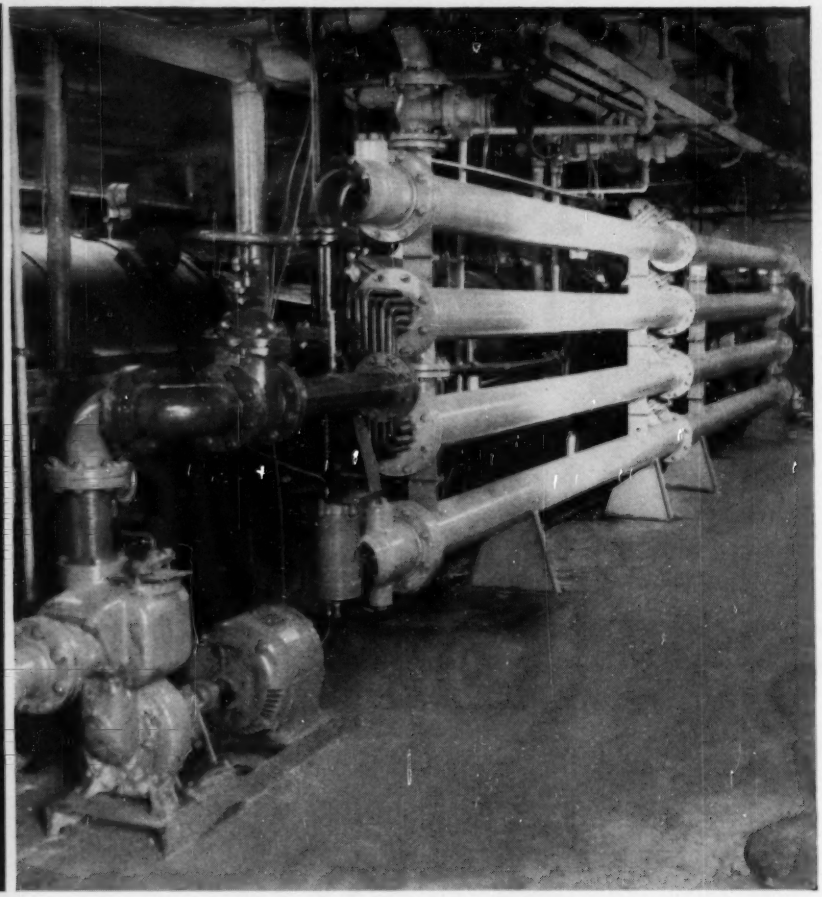
what pays off most toward a plant's profits?



ASK any wet processing plant manager whose plant is equipped with a Bready System of Waste Heat Recovery what contributes more to his plant's profits and the chances are good he will point to his Bready System.

Many a plant manager has said, after his Bready System of Waste Heat Recovery was installed, "Why didn't I do this long ago?"

A Bready System of Waste Heat Recovery is *always* a good investment for any wet processing plant. There is that time, however, when a plant is short of boiler capacity — hot water heating capacity — or both — that a Bready System *really pays off*, making the existing boiler equipment big enough with substantially reduced fuel costs. Write, wire or phone for complete details, or a FREE PLANT SURVEY — TODAY!

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Now! Build your

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DARK BROWN BW

Double Paste

This season, the Brown's have it! We mean the rich new colors like *Andes Copper*, *Burnt Chocolate* and *Earthbrown*. New Pittsburgh-Vat Dark Brown BW Double Paste has been specifically created as an economical base for building these popular dark to medium brown shades.

When you build your browns with Pittsburgh-Vat Dark Brown BW, you automatically enjoy these other Pittsburgh advantages:

1. Uniform high purity and fastness—because of Pittsburgh's careful quality control in its completely integrated plant.

2. Efficient customer service—backed by an alert, experienced applications laboratory.

3. Continuous long-range research to develop new and better dyestuffs for you.

4. Fast, reliable sales service and shipments from our strategically located sales offices (Spartanburg, S.C. and Providence, R.I.) and warehouses (Charlotte, N.C., Philadelphia, Pa. and Spartanburg). Call us about *your* vat dye requirements *today!*

WAD 5864

AATCC RATING

Pittsburgh-Vat Dark Brown BW Double Paste

Light	
Dark Shades	7-8
Light Shades	6-7
Washing AATCC #4	4-5
Chlorine	4-5
Peroxide	4-5

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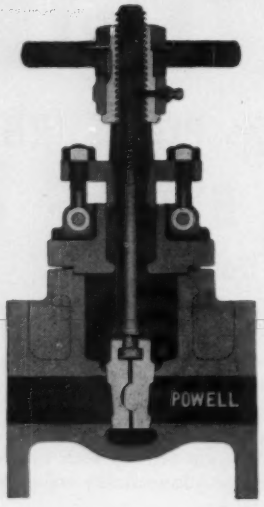
Preferred for Precision and Performance



Powell Valves are the choice of engineers because they know every valve is precision made, meeting every specification—every time.

And there are other good reasons why engineers prefer Powell Valves—because Powell Valves are dependable . . . economical . . . and Powell has the COMPLETE quality line of valves.

Consult your Powell Valve distributor. If none is near you, we'll be pleased to tell you about our complete line, and help solve any flow control problem you may have.

The Wm. Powell Company
Cincinnati 22, Ohio...109th year

FIG. 2495 (Sectional)—Stainless Steel O. S. & Y. Gate Valve for 150 Pounds W. P. Double Wedge Disc is accurately guided to seat.

FIG. 375—Bronze Gate Valve for 200 Pounds W. S. P.

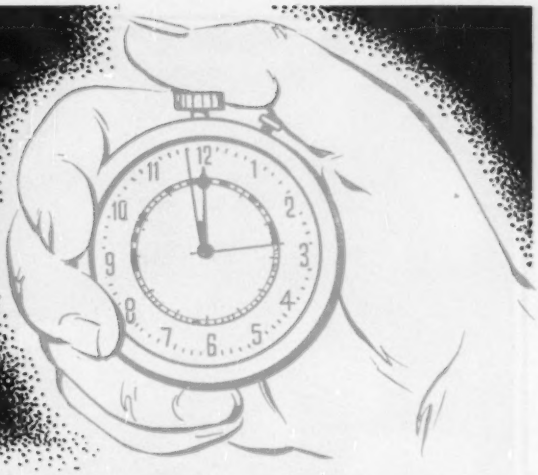
FIG. 150—Bronze Vulcanized Composition Disc Globe Valve for 150 Pounds W. S. P.

FIG. 2193—Large Ni-Resist* Gate Valve for 200 Pounds W. O. G.

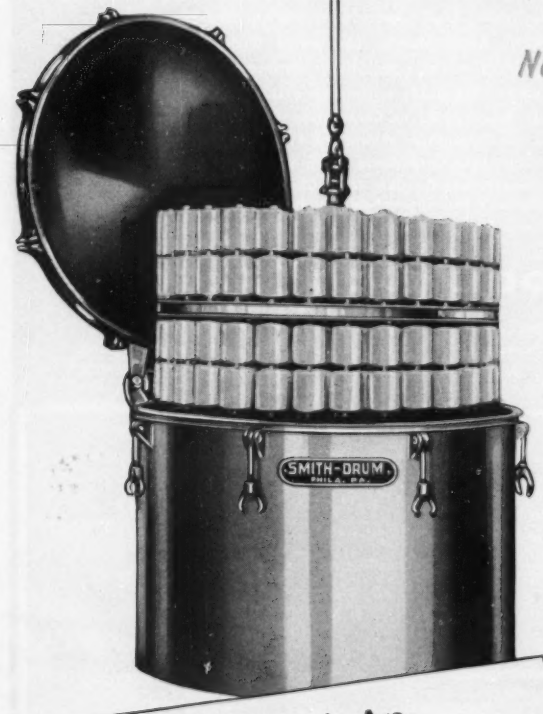
*Trade-mark of The International Nickel Co.

POWELL VALVES

SMITH-DRUM slashes package extracting-drying time to...



LESS THAN ONE HOUR



New **SMITH-DRUM Rapid Package Dryer Makes Tremendous Savings in TIME . . HORSEPOWER-HOURS . . STEAM . . LABOR.**

Here is a new package drying machine that reduces the time required for *extracting and drying* dyed packages to *less than an hour!* Compare that to the time it takes you to extract and dry with your present equipment . . . then figure the savings you could make with this new SMITH-DRUM machine.

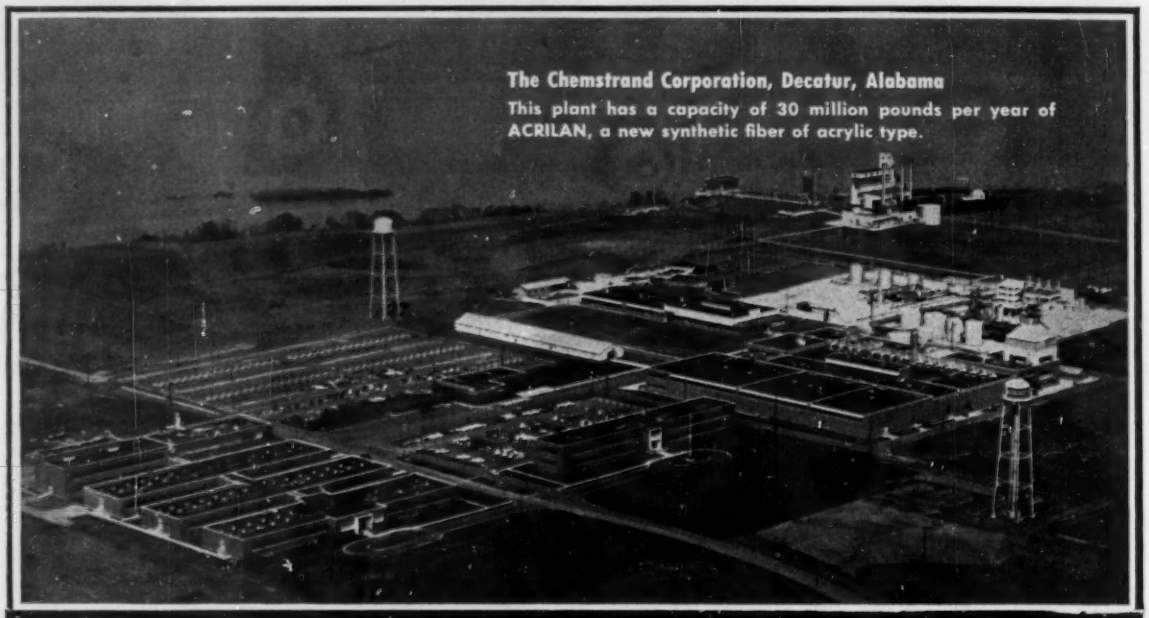
Better still . . . let us do the figuring for you. We will be glad to evaluate the exact time on *your* work and to recommend a machine tailored to meet *your* particular requirements and power supply. Write today.

New Speed Records Are A Habit With SMITH-DRUM

Since 1939, SMITH-DRUM engineers have been establishing new speed records for drying package yarn. First, from 24 hours to 3 hours . . . and now to *less than 1 hour*. No other manufacturer has contributed so much to lower yarn drying costs!

SMITH, DRUM & COMPANY
432 W. Allegheny Avenue
Philadelphia 33, Pa.

Southern Sales Representatives:
PARROTT & BALLENTINE
510 S. Carolina National Bank Bldg.
Greenville, S. C.



The Chemstrand Corporation, Decatur, Alabama
This plant has a capacity of 30 million pounds per year of ACRILAN, a new synthetic fiber of acrylic type.

LOCKWOOD GREENE PROJECTS IN . . . . .

SYNTHETIC FIBERS

In designing and supervising the construction of many synthetic fiber plants, Lockwood Greene has gained recognition in the specialized engineering problems involved in this field, with such clients as ——

- North American Rayon Corporation (Div. of Beaunit Mills, Inc.)
- Celanese Corporation of America, Rome, Georgia
- American Enka Corporation, Enka, North Carolina
- National Aniline Division, Allied Chemical and Dye Corporation. Hopewell and Chesterfield County, Virginia
- National Rayon Corporation, Ltd., Bombay, India

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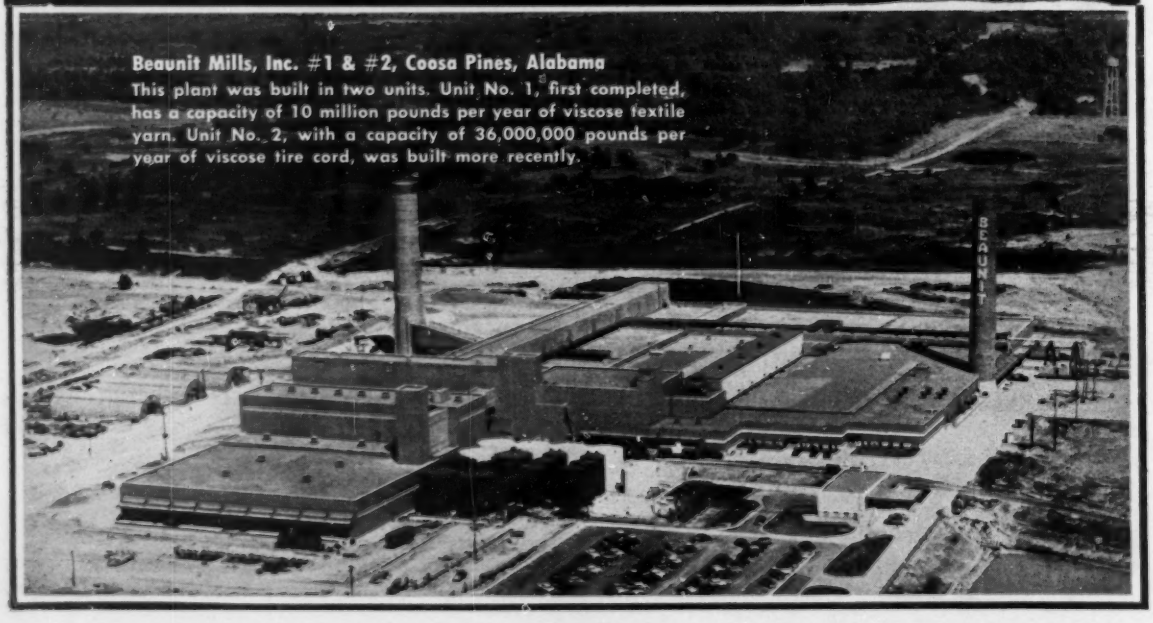
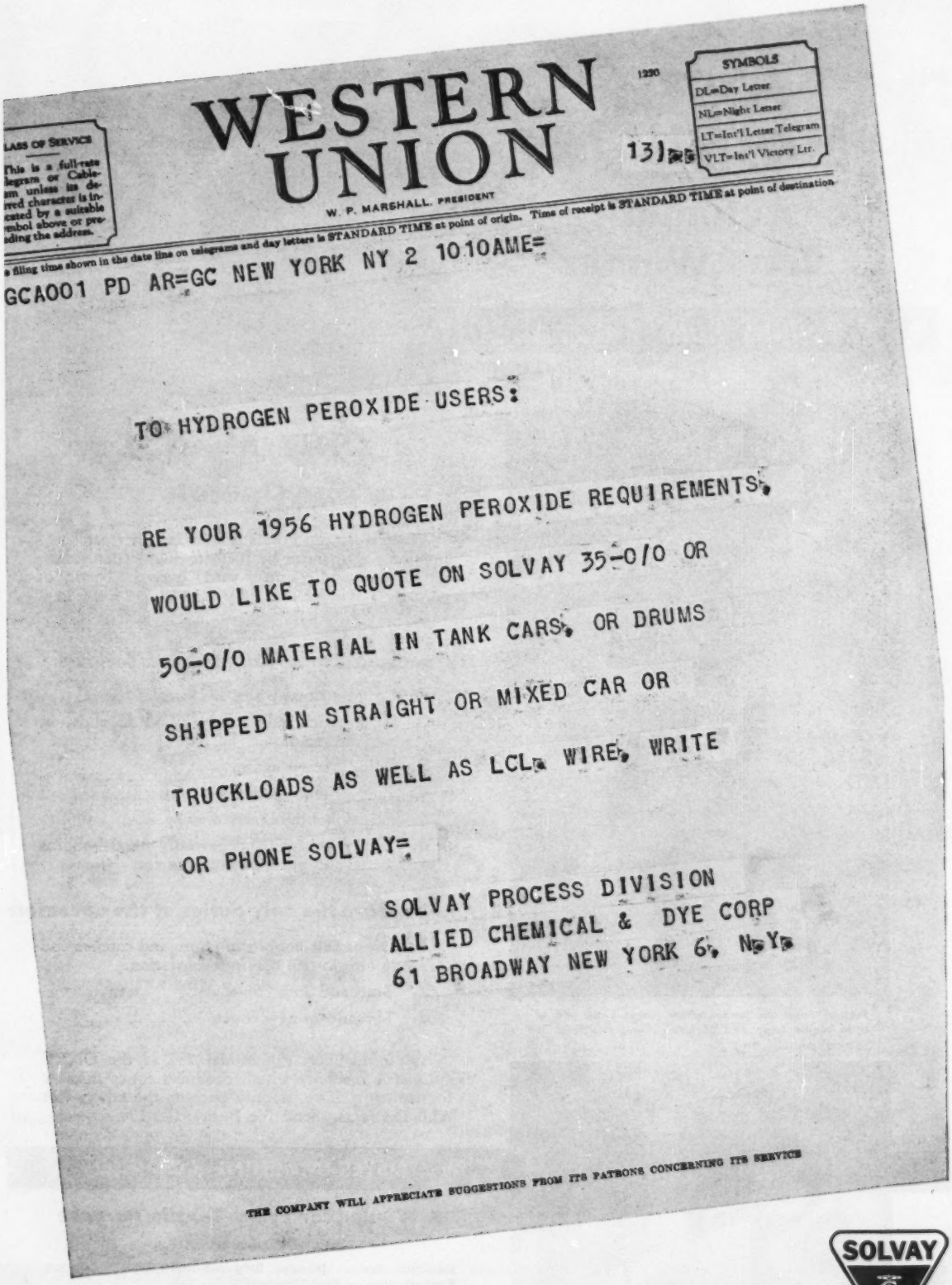


Beaunit Mills, Inc. #1 & #2, Coosa Pines, Alabama
This plant was built in two units. Unit No. 1, first completed, has a capacity of 10 million pounds per year of viscose textile yarn. Unit No. 2, with a capacity of 36,000,000 pounds per year of viscose tire cord, was built more recently.



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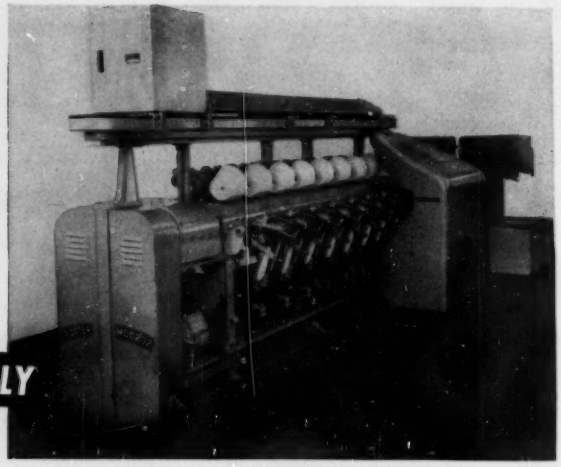
THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

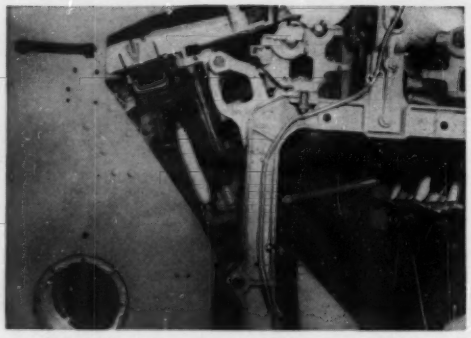
SOLVAY

FOSTER MODEL 202

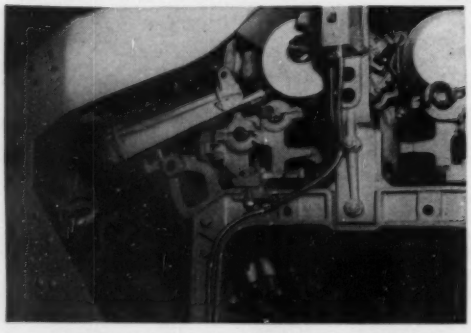
Automatic Cone Winder



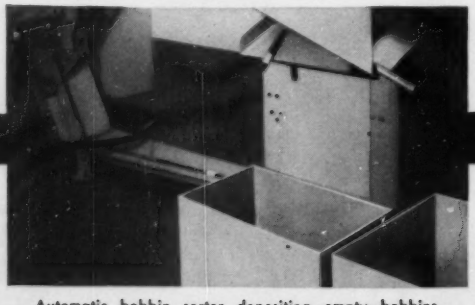
6 OPERATIONS DONE AUTOMATICALLY



Full bobbin moving automatically into supply position. Empty bobbin being doffed to conveyor.



Part of automatic tender which places loose end of cone beside loose end of bobbin and ties them in weaver's knot.



Automatic bobbin sorter depositing empty bobbins in one box and partially filled bobbins in another.

ONLY 3 DUTIES

For Operator

That's why the Foster Model 202 increases production per operator by 100% to 300% (depending on the type and count of yarn) over the best non-automatic winder and why it pays for itself in 2 to 5 years.

The automatic operations are as follows:

1. Spindle stops when end breaks.
2. Automatic tender ties broken ends in weaver's knot.
3. Spindle starts again.
4. Empty bobbins doffed.
5. Empty bobbins carried away.
6. Empty bobbins and partially filled bobbins sorted and put in separate boxes.

And here are the only duties of the operator:

1. Drops full bobbin in chute and catches end in clip in one continuous motion.
2. Dons and doffs cones.
3. Threads up new cones.

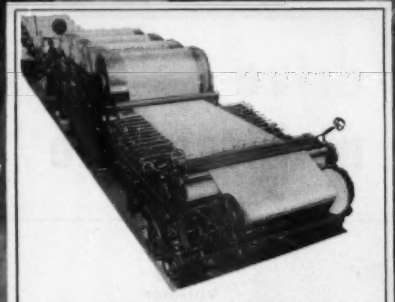
And remember, the Model 202 is the ONLY automatic machine which produces cones suitable for knitting. This is only part of the story. Get ALL the facts. Send for Bulletin A-100.

FOSTER MACHINE COMPANY

A Winder for Every Textile Purpose

Westfield, Massachusetts, U.S.A.

Southern office — Johnston Bldg., Charlotte, N. C. Canadian Representative — Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que. and 35-37 King St., W., Toronto, Ont. • European Representative — Muschamp Textile Machinery Ltd., Keb Lane — Bardsley, Oldham, England.



The KIDDE-JOHNSON SLASHER

. . . gives dependable, around-the-clock operation without breakdowns, precise control of size temperature, drying heats, speeds and stretch. Available with 5, 7, 9 or more cylinders for either silk or cotton system warping or combinations of both.

The Kidde-Johnson Slasher is

geared for even warp tension

The smooth, steady operation of the KIDDE-Johnson slasher is built in part by part. The cylinder drive, for example: a sturdy, precision gear system, the drive keeps warp tension constant at the desired setting . . . needs a minimum of maintenance.

Every part of the KIDDE-Johnson slasher . . . from the stainless steel size box to the heavy-duty 20-inch friction beam drive . . . is built for rugged service. The result is a unit which will run for years and years with only routine preventive maintenance required.

Our free, 20 page brochure tells all about this famous warp-sizer . . . how and *why* it will eliminate the element of chance in your sizing. Write today for your copy. Address:

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

Kidde

MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

HIGH-FINISHING OUTPUT of dyeing range is speeded by G-E direct-current motors. In this installation, packaged Speed Variator power unit was located out of range area to save floor space.

G-E packaged range drive steps up output, cuts down maintenance

INCREASED PRODUCTION—G-E packaged Speed Variator range drive supplies the flexibility and close-speed control you require for continuous operation of textile-finishing equipment. Providing easily controlled speeds that are smoothly adjustable over a wide range, this packaged system keeps motors exactly co-ordinated, maintains constant cloth tension and helps improve quality of goods.

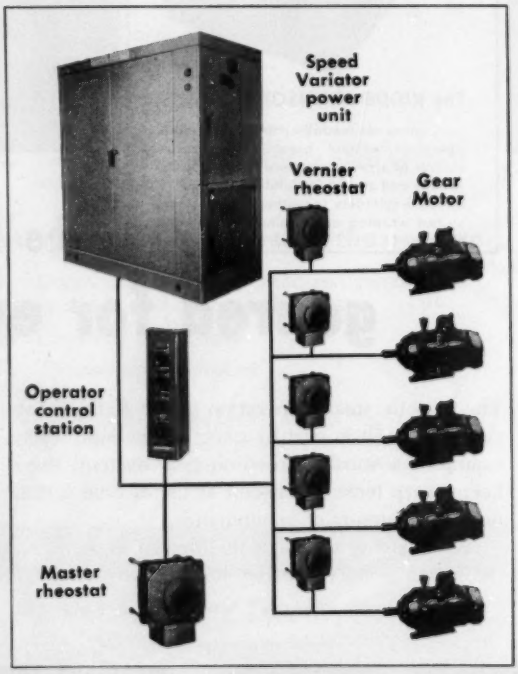
EASY INSTALLATION—Compact Speed Variator power unit is delivered to you completely wired, assembled and tested. No special foundation is required, and unit may be placed in any convenient location.

SIMPLE OPERATION—Speed of the entire range is controlled with a simple rheostat dial or by remotely mounted push buttons. After initial adjustment, co-ordination of the driven range is completely automatic.

LESS MAINTENANCE—Smooth operation and sturdy construction of General Electric's packaged range drive reduces maintenance time and expense. All components of Speed Variator unit are protected within positive-pressurized cabinet and are easily reached through hinged doors. Inexpensive, replaceable glass-fiber filters help keep lint and dirt from packaged power system. The G-E three-piece gear-motors require no special mounting and may be removed for servicing without disconnecting gears.

ENGINEERING HELP—To learn more about range drives and the advantages that adjustable speed can bring to your operation, contact the textile expert at your nearest G-E Apparatus Sales Office. Direct Current Motor and Generator Department, General Electric Company, Erie, Pennsylvania. 815-6

GENERAL ELECTRIC



QUICK, FINGER-TIP CONTROL of entire range is provided by push-button control system and master rheostat. For easy, low-cost installation, controls and Speed Variator power unit can be installed in any convenient location.

MONSANTO TEXTILE TALK

EVERGLAZE® COTTON DRESSES BY JOSEPH LOVE

BOTH TYPES OF RESLOOM* GIVE COTTONS A LASTING "WASH 'N WEAR" FINISH!

Which type of resin gives the most effective "wash 'n wear" finish to cottons? The controversy is raging—what is best for you?

If you favor a melamine resin, Monsanto recommends *Resloom HP* or *M-75*. If you prefer a cyclic-urea formaldehyde resin, Monsanto offers *Resloom E-50*. Both types of resins are compatible, and subtle yet significant changes in the finish for your cottons can be obtained through the use of a "blend." To determine what is best for your application, call on Monsanto—the only producer of cyclic urea and melamine-type resins.

Reslooms are outstanding in imparting dimensional stability and wrinkle recovery. Both types are remarkably durable. They do not wash or dry clean out of fabrics.

Unlike ordinary finishes, Resloom resins do not coat the surface. They are deposited inside absorbent fibers where they actually modify fiber characteristics.

A Monsanto representative will be glad to work with you on technical problems relating to "wash 'n wear" finishes. Write Monsanto Chemical Company, Plastics Division, Dept. TI-12, Springfield 2, Massachusetts.

It pays to finish fabrics with durable

RESLOOM *TEXTILE RESINS*

MONSANTO

RESLOOM: REG. U. S. PAT. OFF.

CORN PRODUCTS REFINING COMPANY

presents

A COMPLETE LINE

of

STARCHES, GUMS & DEXTRINES

Highly recommended for their superior uniformity, stability and cleanliness

GLOBE® BRAND CORN STARCHES

Ideal where a thick boiling starch is required for use in homogenizers. Globe Pearl Corn Starches produce strong films, reducing breaks on the slasher and on the loom. Globe brand extra thick starches produce a smooth, lardy paste.

GLOBE® GUMS AND DEXTRINES

Preferred for warp sizing spun rayon, spun rayon blends, and synthetics; warps desize readily.

TEN-O-FILM STARCHES

A new line of starch derivatives, similarly applicable, which are gaining wide use where set-back is a factor in the size operation.

EAGLE® BRAND CORN STARCHES

For warp sizing carded and combed yarns. These popular thin boiling starches are available in all fluidities necessary to maintain correct size concentration for best possible weaving.

HERCULES BRAND CORN STARCHES

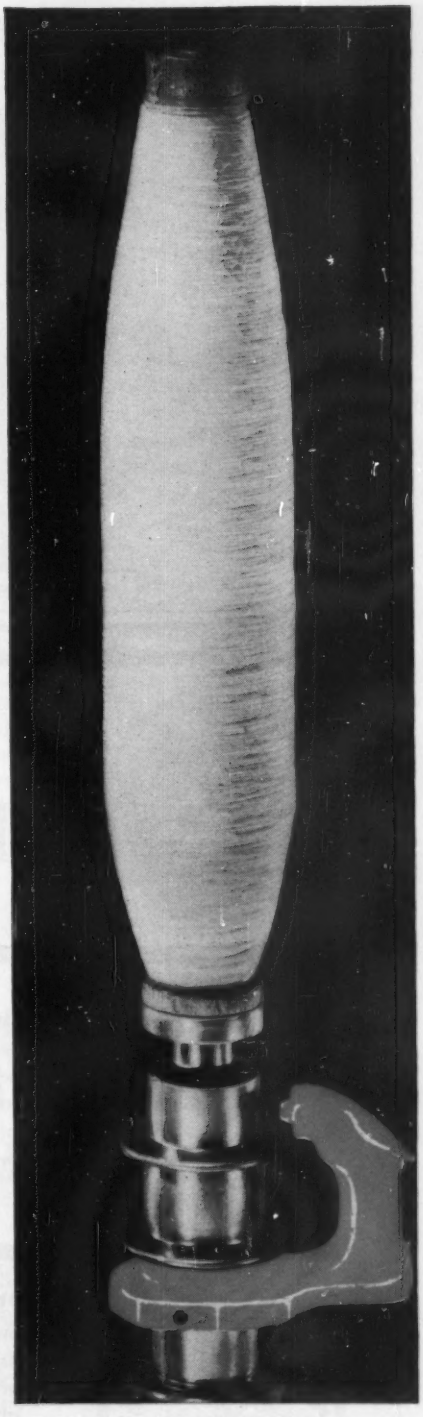
Used in a variety of sizing applications. These oxidized starches produce a smooth but tough, clear film. Their strength and uniformity help reduce breakage on the loom, cut down shedding.

TAKE ADVANTAGE of our free technical service. Our lab and field experts will welcome the opportunity to help you with actual production problems. Write us today.

CORN PRODUCTS REFINING COMPANY • 17 Battery Place, New York 4, N. Y.

keep spindles spinning clean and true with

Gulfspin



Spindles will stay clean and spin true when you use Gulfspin. This remarkable spindle oil resists sludge formation, holds contaminants in suspension so they do not deposit on spindle parts, and provides effective protection against rust.

You also reduce power costs with Gulfspin. Ordinary spindle oils often thicken after a few months of service, requiring increased power. Gulfspin shows no increase in viscosity after many months of service. You'll find that these advantages add up to smoother spindle operation, fewer ends down, and rock-bottom maintenance and power costs.

Consult the telephone directory for the number of your nearest Gulf office. Then contact a Gulf Sales Engineer and let him prove the superiority of Gulfspin on your frames.

Gulf Oil Corporation • Gulf Refining Company
Pittsburgh 30, Pennsylvania

GULF

THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

ARE YOU IN THE TEXTILE BUSINESS?

Whatever You Make...Whatever You Sell...

...you, too, will find that it's good business to produce in Georgia. Over 7100 manufacturers, including many of America's greatest industrial names, have already staked their claims to share in Georgia's Golden Age. Georgia—scene of America's first gold rush in 1828, today offers many nearby, growing consumer markets to sales-minded industries...

Open For Business Every Day In The Year

Even the weather is on your side in Georgia, where every day is production day. Industry is on the move to Georgia . . . with an amazing array of natural and physical resources, readily accessible and in abundant supply. Superb transportation—plus a liberal pool of intelligent workers make it easy to produce and move goods *fast!*

Get the facts from Scott Candler, Secretary—Dept. 22

GEORGIA DEPT. OF COMMERCE

SCOTT CANDLER, SECRETARY • 100 STATE CAPITOL • ATLANTA, GEORGIA

Textile Industries
for December 1955

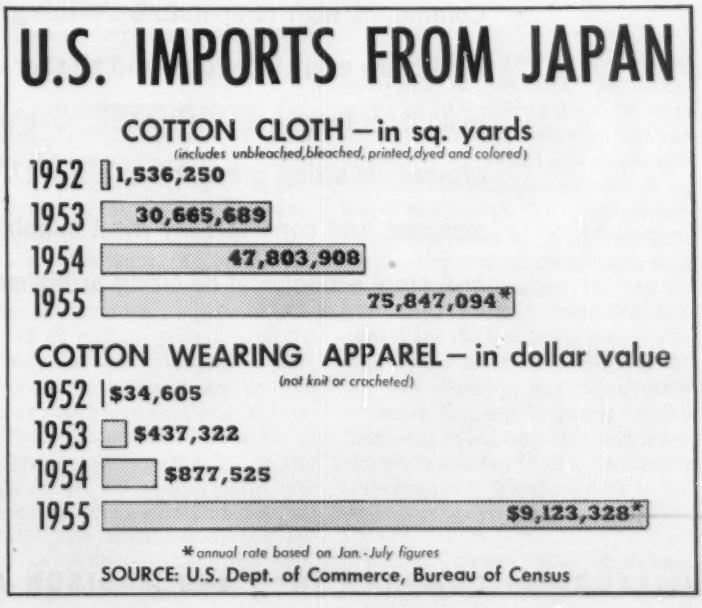
News in Brief

Frightening Situation for Textile Processors. At the recent fabric styling clinic, under auspices of the Textile Distributors Institute, Inc., statistics were presented by Nat Leavy of Goldstein & Leavy, Inc., which offer for the future a "frightening situation for textile processors." Statistics: Consumer expenditures for clothing and accessories have not been very sensitive to the steady increases in consumer income. Disposable income during the last eight years has been increasing at an average rate of almost 6½ per cent annually. For every 10 per cent gain in income, consumer expenditures for new homes and automobiles have increased by 17 per cent; for education 14 per cent; for foreign travel 15 per cent—but for apparel and accessories only 1 per cent. The clinic was held for all branches of the textile industry to study how the problem can be met. Some ideas suggested: Make products more attractive to the consumer; find better means to promote and merchandise; educate the retailer and consumer in the desirability of textile products.

SRRL Develops Light-Weight, Wind-Resistant Fabric. A cotton fabric which is highly resistant to both wind and water, yet light, flexible, and strong, has been developed at the Southern Regional Research Laboratory of the U. S. Department of Agriculture. The fabric uses either a 3/3 or 2/2 basket weave, and has 165 picks per inch in the grey, inserted with the aid of the SRRL high-pickage loom attachment [see TEXTILE INDUSTRIES for June, 1951, p. 141]. Copies of the report and engineering drawings of the loom attachment may be obtained without cost from SRRL, at 2100 Robert E. Lee Boulevard, New Orleans 19, La.

Knitting School Opens. A school for knitters and hosiery machine fixers has opened in High Point, N. C., cosponsored by High Point hosiery manufacturers and the North Carolina State Department of Trade and Industrial Education. The Department is underwriting the cost of instruction, and the hosiery manufacturers participating in the program will pay the other costs involved. Length of the course will be six to seven weeks. After the course of study has been definitely established, the school will be opened to mills in other parts of North Carolina, which will be charged a tuition fee in an amount dependent on the cost to the High Point manufacturers.

"Mosaic" Sheep to Undergo Research. Five "mosaic" sheep are now in the hands of a research organization, and studies will be made in growth, quality, density, and length of wool produced in various breeds. The value of these sheep for research is that something which is yet unknown permits the growth on parts of the skin of wool which is completely different from the rest of the fleece. Thus, different types of wool can be tested on the same animal, under identical conditions of environment and heredity. One point already proved is that high wool production does not necessarily go hand-in-hand with high



INCREASE IN IMPORTS of textile goods from Japan is graphically demonstrated by this chart. In view of increasing imports from this cheap labor country, industry leaders believe that the U. S. textile industry is facing its worst crisis; suggest that quotas be established for Japanese imports.

KEEP IT HOT

you save money at higher temperature with

RAPIDASE®

Continuous high temperature de-sizing has been adopted by virtually every large dyer and finisher in the country. The majority of these use RAPIDASE. One reason is that of all enzyme de-sizing preparations, RAPIDASE is most heat resistant and consequently most suitable for the speedier and more economical de-sizing at higher temperature.

WALLERSTEIN COMPANY, INC., 180 MADISON AVENUE, NEW YORK 16, N. Y.

density, as was previously believed.

Machinery Manufacturers Hosts to Educators. The American Textile Machinery Association was host for the National Council for Textile Education at the educator's recent annual meeting. The three-day program consisted of tours of the plants and research departments of several machinery manufacturers, and analytical and economic discussions on an industry-wide level. The NCTE is composed of the deans of textile schools and colleges.

Advances in Laundry Textiles. Through use of properly constructed nylon wash nets, the cost of washing 100 pounds of clothes may be reduced an average of 12.6 per cent, according to S. G. Higgins of Du Pont's Textile Fibers Department. 260/17 nylon has been found to give the best service. With nylon press covers, the cost per day of operation is as much as 25 per cent less than for covers of conventional fibers, according to Mr. Higgins. Dacron has been found to be best for ironer covers, with an average useful life of 20 weeks, according to reports from the trade, in comparison with 54 days for nylon and two weeks for covers of conventional fibers. Experiments now being conducted include the use of Dacron for wash nets and Teflon for press covers.

Wool Consumption Up. Total mill consumption of apparel wool for all woven wool textiles from January through August, 1955, was 4 per cent ahead of the similar 1954 period, reports The Wool Bureau. The gains included a 30 per cent rise in the production of men's civilian apparel fabrics during the first half of the year, and a 20 per cent rise in the production of women's apparel fabrics. Consumption of wool on the worsted system declined, but carpet wool consumption increased 12 per cent. Civilian per capita consumption of wool increased during the first half of 1955 to 2.9 pounds, compared to 2.6 pounds in 1954.

AATCC to Stay at Lowell. The American Association of Textile Chemists and Colorists has formally agreed to maintain headquarters at Lowell Technological Institute for at least the next eight years, and to occupy on completion a special AATCC wing of a new research building planned for the Institute.

Civil War Cotton In Good Condition. The National Cotton Council reports that a bale of cotton picked by slaves in 1862 is still in good condition. The cotton, from

which the seed was separated by hand, was in storage at West Point, Miss., until recently. It has been presented to George A. Levy, vice-president of Anderson, Clayton & Co.

USDA Proposes Micronaire Standards. The U. S. Department of Agriculture has announced proposed official cotton standards to provide Micronaire determinations of fiber fineness and maturity. The proposed amendments to cotton futures regulations would provide Micronaire determinations upon request, for samples submitted to the USDA for certification for delivery on cotton futures contracts. Micronaire determinations would not be mandatory.

Big Opportunity in Nylon Tarpaulins. Coated nylon tarpaulins offer the canvas products industries a "significant new opportunity for progress and achievement," according to Amos H. Griffin, vice-president of Amerotron Corp. Within five years, coated nylon can achieve an annual volume of 20 million pounds and $50 million, he said. Successful performance of nylon tarps in the field is dependent on three factors: (1) The tarpaulin must be made of an open-weave base fabric, (2) The fabric must be coated with the correct neoprene or vinyl coating, and (3) The coating must be applied in sufficient quantity, balanced on both sides of the fabric, with high levels of strength, adhesion, and resistance to tear.

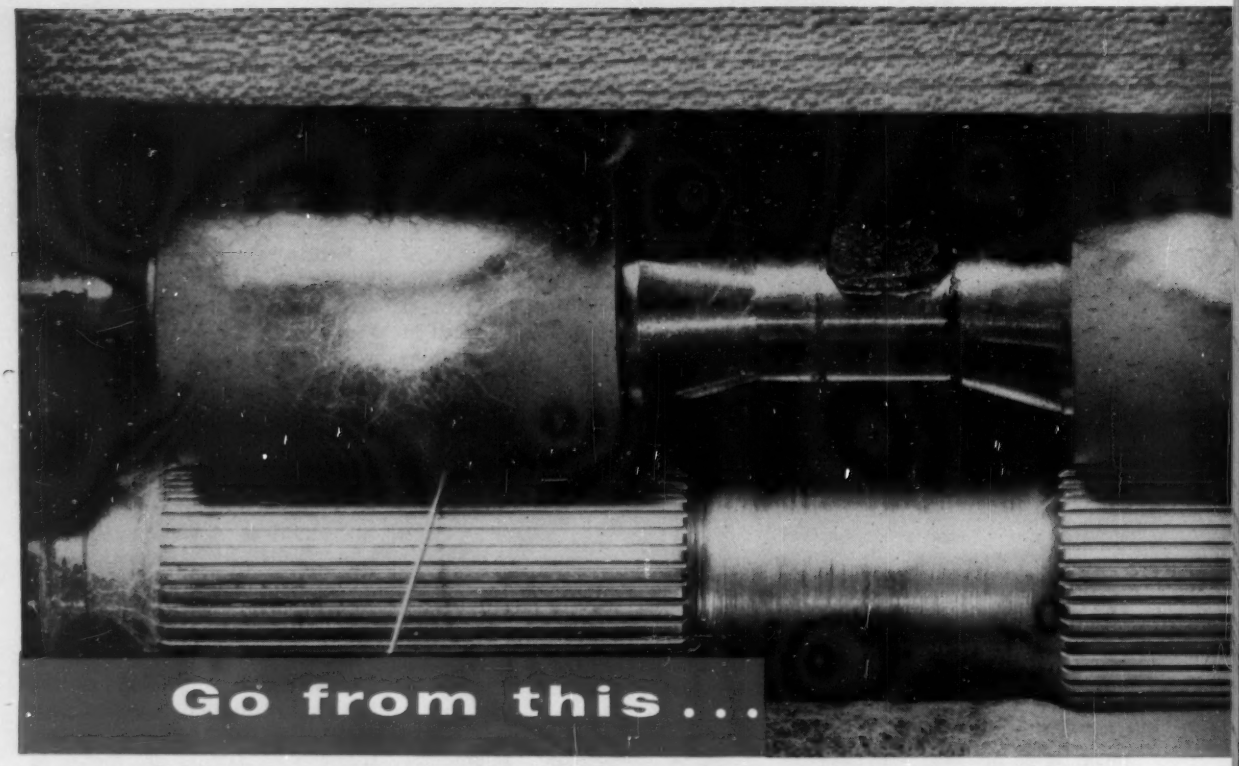
News in Brief

Perkin Centennial. The one-hundredth anniversary of the discovery of mauve, the first synthetic dyestuff, by William Perkin will be celebrated by a series of observances in London during May, 1956, under the auspices of the Society of Dyers and Colourists. Celebration of the Centennial by the American textile wet processing industry will be directed by the American Association of Textile Chemists and Colorists, which has designated the week of Sept. 10, 1956, as "Perkin Week."

Ladies' Editors Favor "Seal of Cleanability." According to the National Institute of Rug Cleaning, editors of the nation's leading women's magazines are highly in favor of its Seal of Cleanability program [see TEXTILE INDUSTRIES for March, 1955, p. 71]. The statement is based on a recent opinion survey, in which 94.5 per cent of those interviewed considered it to be either "very much of a service" or "of some service." [For a different opinion, see TEXTILE INDUSTRIES for June, 1955, pp. 128 and 130.—Eds.]

1956 Upland Cotton Quota Announced. A national marketing quota of 10 million bales (the legal minimum) and a national acreage allotment of 17,391,304 acres for the 1956 crop of upland cotton have been announced by Agriculture Secretary Benson. A referendum on the cotton marketing quota will be held on December 13, and in the highly unlikely event that the quotas are turned down, support to eligible growers will drop to 50 per cent of parity. Marketing quota for extra long staple cotton for the 1956 crop is 35,300 bales, and acreage allotment is 45,305 acres. Quota referendum is the same date as for upland producers.

NBITT Opens New Building. Classes at New Bedford Institute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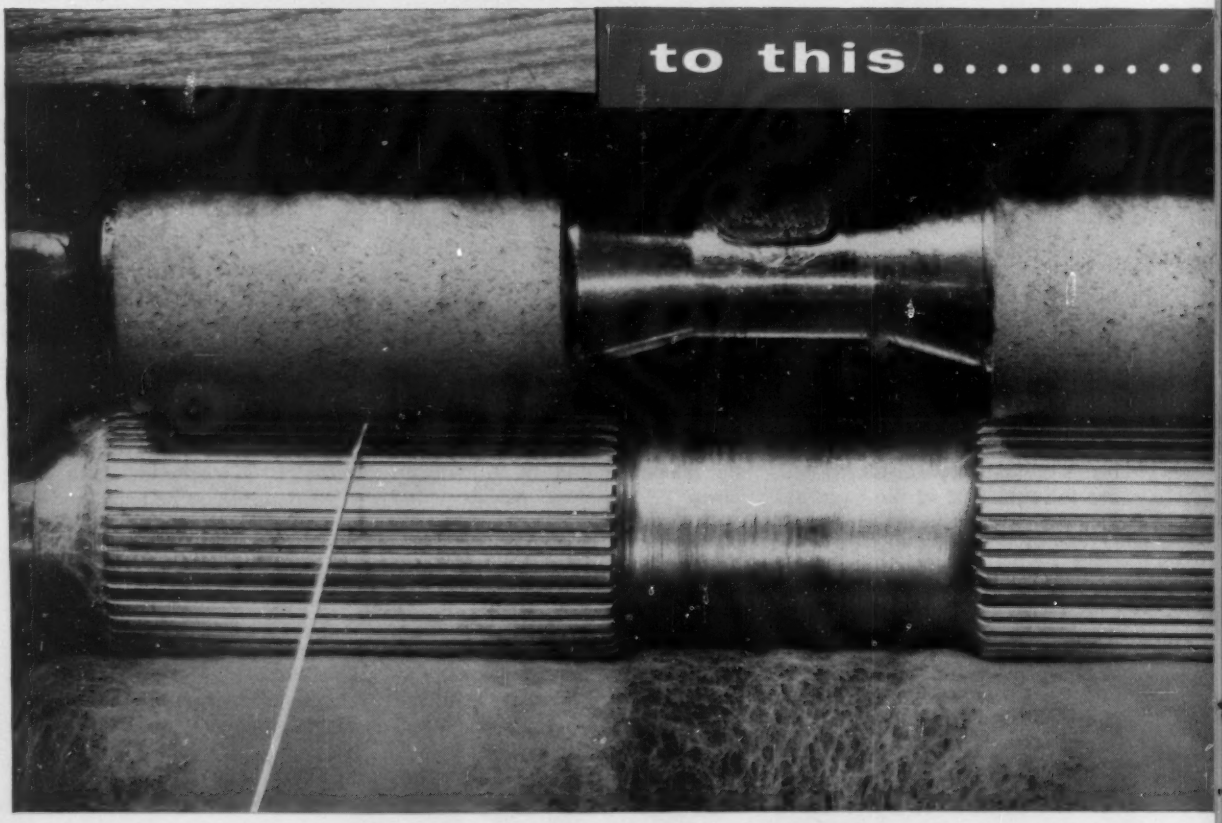
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PICTURE AT LEFT ABOVE shows serious eyebrowing on frame running 30's yarn.

LEFT BELOW—Not an eyebrow in sight! Frame is equipped with NO-742-S Accotex Cots.

. . . . . with NO-742-S Cots

MILL RECORDS PROVE NO-742-S ACCOTEX COTS PREVENT SERIOUS EYEBROWING

Years of test and regular runs in mills all over the country have shown that Armstrong NO-742-S Accotex® Cots eliminate serious eyebrowing.

One mill supervisor says, "With normal picking schedules, we've never had an eyebrow since we started to use NO-742-S." Another mill man puts it even more strongly. "When all other cots show eyebrows, these Accotex Cots don't."

NO-742-S Cots prevent eyebrows from forming because of their exclusive "constant-friction" drafting surface. This surface has just the right amount of bite needed to pick up loose fibers—and pack them well back under the clearer boards. If you've been seeing eyebrows on your clearer boards, it's time to switch to NO-742-S Cots. Your Armstrong man will be glad to help you set up a test frame. Why not call him today?

Send for our illustrated booklet, "Armstrong Textile Roll Coverings and Mill Supplies." Write Armstrong Cork Company, Industrial Division, 6512 Ivy St., Lancaster, Pennsylvania.

Armstrong ACCOTEX COTS

. . . used wherever performance counts

SWIFT'S SOAPS

TREAT FINE WOOLENS RIGHT

Fifty years of serving the needs of the Textile Industry have taught us a valuable lesson . . . one whose benefits are passed back to the industry in every bag, drum or carload of Swift's Soap shipped:

Textile Industry needs are best served by service.

Swift's experience gained in day to day *living* with textile problems have resulted in a diversified line of soap products that are *geared* to today's practiced skills of dyeing, fulling and scouring. There's a Swift's Soap for the textile finishing job regardless of temperature; or for use where fine dyeing calls for complete, yet gentle scouring. There's one for *your* set of requirements . . . one to give sure, skilled and experienced service where fine woolens need the right treatment.

Yes, Swift's Soaps treat fine woolens *right* . . . and Swift's salesmen will treat *you* right . . . 375 Swift's distribution points throughout the U.S. and Canada can provide prompt, courteous, *resourceful* service on the products listed at left. Write or call for further details today and remember . . .

FOR FAST DELIVERY AND RESOURCEFUL SERVICE

375 Swift's distribution points located throughout the U.S. and Canada can give you immediate delivery on these Swift-quality soap products:

VERTEX FLAKES

●

557 FLAKES

●

WHITE RIBBON CHIPS

●

WOOL FLAKES

ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS

SWIFT & COMPANY

SOAP DEPARTMENT

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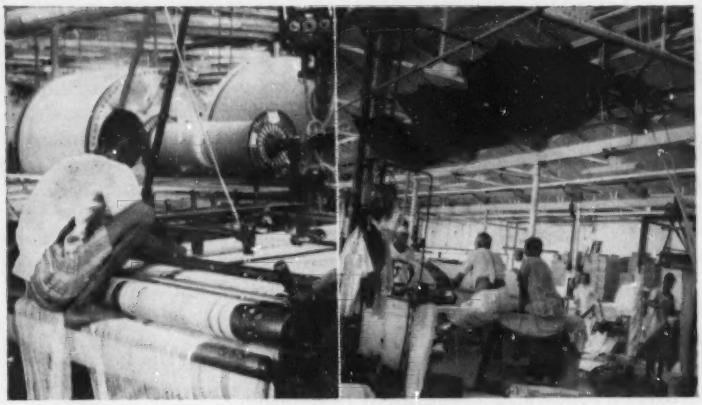
Swift
1855 CENTENNIAL 1955
TO SERVE YOUR INDUSTRY BETTER



THESE PHOTOGRAPHS were supplied by the International Labour Organization, captioned, "This worker in a modern textile mill in India is repairing the break in a thread," (left); and "Finishing process in a modern textile mill in India," (right). No explanation was made of the umbrellas in the finishing plant photo.

News in Brief

of Textiles and Technology met recently for the first time in the new Engineering Building, across the street from the present campus. Enrollment for the 1955-56 academic year is 335 for the day curricula and 615 for part-time and evening courses.

Apparel Course at Georgia Tech. Establishment of an apparel engineering course at Georgia Institute of Technology is under way. It will be financed in part by a foundation created by the Southern Garment Manufacturers Association. The apparel engineering course will be coordinated with the textile engineering course.

Increase in Nylon Tire Cord. The retail dollar volume of nylon cord tires has more than doubled in the past year, and has quadrupled in two years, according to the Du Pont Co.

U. S. Olympic Team to Wear Wool. An all-wool costume in red, white, and blue will be the official U. S. parade uniform at the Seventh Winter Olympic Games, to be held in Italy next January 26 through February 5. Uniforms for the 100 team members, valued at about $160 each, retail, were donated by several clothing manufacturers.

TRI Seminars. The following is the balance of the fall, 1955, Textile Research Institute seminar schedule:

December 15—"The Bulk-Compression Characteristics of Wool Fiber," J. H. Dusenbury, TRI staff member.

December 29—"Pyrolytic Degradation Products of Cellulosic Materials," R. F. Schwenker, Jr., TRI Fellow.

January 12—"Dimensional Effects in the Mechanical Testing of Textile Materials," S. Backer, Associate Professor of Mechanical Engineering, MIT.

The seminars are held at the TRI laboratories at 2:00 P.M., and are completely informal. TRI members are invited to attend.

European Group Studies Egyptian Cotton. The International Cotton Federation has just completed a study of the effectiveness of the steps taken by the Egyptian government to improve the quality and staple of Ashmouni cotton, the most commonly used (in Europe) Egyptian variety. During the past few years cotton spinners throughout the world have complained of the gradual deterioration of the cotton; the steps taken by the Egyptian government are aimed primarily at purification of the Ashmouni strain.

Rayon Staple Imports. For the first seven months of 1955, imports of rayon staple totaled 111,671,000 pounds, almost double the amount imported for the full year 1954, and 22 per cent above the previous *annual* record in 1950. West Germany continues as the most important supplier, with 19 per cent of the total, followed by France, Italy, United Kingdom, Belgium, Norway, Switzerland, Austria, Sweden, and Cuba, in that order.—*Textile Organon.*

New Flame Resistant Finish. The Industrial Research Institute of the University of Chattanooga reports development of a treatment for imparting flame resistance to cotton and other cellulosic fabrics. The treatment, based on a phosphorylamide compound, is applied before dyeing, and is said to be permanent. Discussions are being held with a chemical company regarding commercial production, and the Army is testing it on military fabrics.

Weaving Equipment in U. S. Wool Mills. *World Wool Digest,* after a study and refinement of Census Bureau figures, estimates that the number of looms in the woolen and worsted mills of the United States decreased about 16 per cent during the 18 months from June 30, 1953, to December 31, 1954. The figures for looms in place are given in the following table.

	June 30, 1953	Dec. 31, 1954
Pile and Jacquard	1,883	1,461 (c)
Broad automatic	26,231	22,749 (a)
Broad nonautomatic	3,460	2,668
Narrow automatic	515	(a)
Narrow nonautomatic		(b)
TOTALS	32,089	26,878

(a) Narrow automatic is included with broad automatic.
(b) Not available.
(c) Includes 100-150 cotton and synthetic looms operated by mills primarily producing woolen and worsted fabrics.

Tariff Notes. Any reduction in U. S. tariffs on wool yarns would go counter to the Congressional policy of increasing American wool production to some 300 million pounds a year in the interest of national defense, as indicated in the national wool act of 1954, according to Edwin Wilkinson, executive vice-president of the National As-

A Scientific Approach to Pollution Control

This is the second in a series of advertisements based on a technical paper by B. W. Dickerson, Sanitary Engineer, Hercules Powder Company. A complete copy of the report or additional technical data on CMC Warp Size can be obtained by writing direct to Hercules.

Where does pollution in textile mills begin? Sanitary engineers today know that up to sixty per cent of BOD (Biochemical Oxygen Demand) pollution is a result of the desizing operation. They also know that the starch normally used as a warp size and subsequently removed by enzyme extraction and hot water builds up the BOD in finishing mill waste discharges. Such knowledge provides a real starting point for any pollution control program.

Considerable interest in the past has been shown in the use of substitutes for this starch and many synthetic film-formers have been evaluated. While these materials have proved satisfactory substitutes for all or part of the starch used in warp sizing, their high cost has made their use impractical.

Hercules® CMC Warp Size, while higher in cost than starch, is less expensive than other synthetic film-formers. Its use also permits substantial reductions in solids add-on. In many instances it decreases the amount of water used in desizing, and eliminates the need for enzymes in the desizing process.

Because of its unusually low BOD value, CMC Warp Size permits significant reduction in pollution load. When used alone in sizing, the resultant BOD has been cut by 98 per cent. When used in combination with starch, CMC Warp Size, because of its excellent film-forming properties, appears to coat the starch molecules with a film that makes them resistant to bacterial action during the early stages after mill wastes are discharged into the stream. Thus, such CMC Warp Size starch wastes move downstream to larger, fast-moving water before developing a BOD load sufficient to contribute to pollution.

Where over-all reductions up to 30-40 per cent in the pollutional load are required, a 2 to 1 starch-CMC Warp Size combination provides the necessary reduction in BOD without capital outlay for treatment equipment. Where larger reductions are required, the use of the starch-CMC Warp Size combination means a substantial reduction in the size of the treatment plant required and can reduce operating and financing costs of such a plant by as much as fifty per cent.

VC55-6

Virginia Cellulose Department

HERCULES POWDER COMPANY

INCORPORATED

903 Market St., Wilmington 99, Del.

sociation of Wool Manufacturers. Ames Stevens, Ames Textile Corp., chairman of the NAWM executive committee, charges that U. S. officials who put wool yarns on the bargaining list for tariff cutting negotiations with other members of GATT "apparently are willing to risk further damage to the U. S. wool spinning industry and its employees for the benefit of British, Japanese and other foreign mills and their poorly paid workers." * * * Textile and garment firms in Jackson County, Georgia, sponsored an exhibit recently at the Jackson County Fair designed to explain what lower tariffs mean to residents of the county. Statistics were quoted and explained, and Japanese products manufactured by low-paid labor were compared with identical American-produced merchandise. * * * The National Association of Hosiery Manufacturers has renewed its protest to the Department of Commerce against the tariff imposed by Switzerland on nylon stockings imported from the U. S.

Changing Demand for Various Cotton Staples. Records for cotton distribution (domestic consumption plus exports), for which figures are available only for the years 1936 and following, show a decided change in the staple lengths most in demand. In 1953 the demand for 15/16″ and shorter had declined to 34 per cent of what it was in 1936; 31/32″ to 41 per cent; 1″ to 87 per cent; 1 1/32″ increased to 246 per cent; 1 1/16″ increased to 437 per cent; 1 3/32″ increased to 140 per cent; 1⅛″ and longer decreased to 22 per cent. The demand has greatly declined for 31/32″ and shorter, and for cotton 1⅛″ and longer. On the other hand, demand has greatly increased for cotton with staple lengths of 1 1/32″ and 1 1/16″, with some increase in 1 3/32″. —*National Bank of Commerce.*

Don't Play Up Phony Patriotism. With reference to foreign imports of textiles, A. K. Winget, president of the American Cotton Manufacturers Institute, said in a recent public speech: "We have something to give the American consumer that no foreign country can ever give. We have big resources in craftsmanship and know-how. Let's build for the future on American qualities, American styling, American satisfaction. Let's do it aggressively, not by playing up to phony patriotism or by running down foreign goods just because they are foreign-made. Instead, let's make up our minds to turn out the best we know how, sell it on its merits, and tell the public about it with all the pride and enthusiasm we have."

Woven Cloth Production in Southeast. The five southeastern states, Alabama, Georgia, Tennessee, North and South Carolina, produced approximately 53 per cent of the nation's 1954 supply of cotton woven finished goods, according to information from the Department of Commerce.

World Bank Loans Increase Textile Production. The International Bank for Reconstruction and Development was established to provide and facilitate international investment for increasing production, raising living standards, and helping bring about a better balance in world trade. The Bank, established in 1946, is made up of 56 member nations and is financed by these nations, by the sale of its own securities, and the sale of part of its loans. Some of the loans made to member countries which are helping the textile industry include: Increased production in a cotton mill which was one of 12 Ethiopian enterprises to receive a $2 million loan; a $28 million loan to Southern Rhodesia for increasing electrical power to help double the number of industrial plants in the colony since 1946 (which includes textiles); 13 projects in Turkey related to textile manufacturing, one Istanbul mill being financed for $265,000 worth of machinery.

1954 Census of Business. The first statistics from the 1954 Census of Business are scheduled to be available to those interested in them beginning this month. The work was performed by the Bureau of the Census, Washington 25, D. C., with the cooperation of business firms in this country, Alaska, and Hawaii; persons interested in

News in Brief

securing the statistics may write the Bureau, stating specifically the type of business in which they are interested. Details by kinds of business will be presented for each area. All reports will not be available immediately, but will be distributed upon request as they are printed.

Proceedings of Wool Research Conference Available. Proceedings of the International Wool Textile Research Conference held in Australia last August and September (see article beginning on page 137 of this issue) will be printed in a special five-volume series, contents of which are: Vol. A—Histology of Wool and Hair and of the Wool Follicle; Vol. B—Chemical Physics and Physical Chemistry of Wool and Proteins; Vol. C—Chemistry and Biochemistry of Wool, Proteins, Peptides, and Amino Acids; Vol. D—Physics of Wool and Other Viscoelastic Fibers; Vol. E—Wool Technology. Price per volume, $11.22, except Vol. E which is $22.45; all five volumes, $56.11. Order from Secretary (General Administration). C.S.I.R.O., 314 Albert St., East Melbourne, Victoria, Australia.

Cotton Situation. The annual review of the world cotton situation by *Textile Organon* reveals that production during the 1954-55 crop year aggregated 35,400,000 bales, a decrease of 900,000 bales from the 1953-54 season, but higher than any other season since the 1937-38 record production of 36,700,000 bales. Total available world supply, including carryover from the previous year, is 54,700,000 bales. Production again exceeded consumption, so that the total carryover rose to 20,800,000 bales.

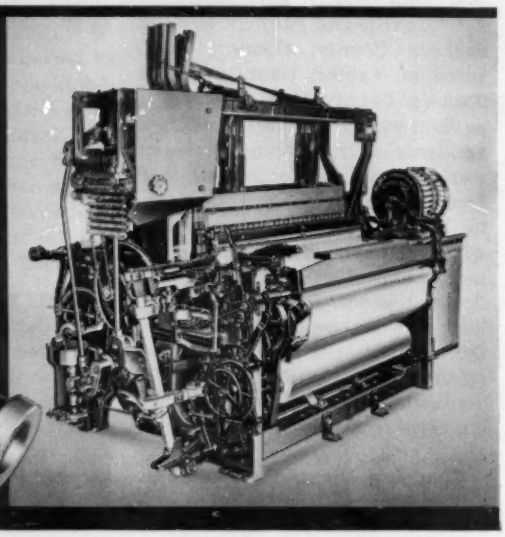
Status of CCC Price-Support Program. The U. S. Department of Agriculture has announced that as of July 31, 1955, the investment of the Commodity Credit Corp. in price-supported commodities amounted to over $7 billion, including outstanding loans and inven-

LOOMS

number four of a series depicting

MORE AND BETTER TEXTILE PRODUCTION WITH HYATTS

Disassembled Draper Loom camshaft housing with a Hyatt Wound Roller Bearing.



Draper Model XD Loom with various sizes and types of Hyatt Roller Bearings on the crankshaft, camshaft, rockershaft, whip roll, whip roll arms, yarn beam and other principal positions.

More "firsts" and fewer "seconds" are the natural result when the principal shafts of your looms are equipped with Hyatt Roller Bearings.

Hyatts prevent lubricant from splattering on the cloth because all housings are securely sealed.

Moreover, Hyatt-equipped looms require considerably less starting power than when old-fashioned sleeve bearings are used. In fact, Hyatt Roller Bearings reduce friction so that looms can be easily turned by hand whenever necessary—another reason why you're always sure of *more and better textile production with Hyatts!* For further details on the profitable application of Hyatt Roller Bearings to textile machinery, request Bulletin T-54 from Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT ROLLER BEARINGS

STRAIGHT BARREL TAPER

tory. Included in the figure are loans on upland cotton amounting to $1,083,172,799; loans on extra long staple cotton of $35,128,894; an inventory of 1,660,993 bales of upland cotton with a cost of $290,083,845; and an inventory of 151,921,564 pounds of wool with a cost of $101,808,458. * * * Under a special program, up to a million bales of CCC cotton with a staple length of 15/16" or shorter will be offered for sale on a competitive bid basis, for export only, effective January 1, 1956. Under this program, prices may be somewhat lower than the minimum price limitations which control most CCC sales.

Publications Available. "The Invention of the Sewing Machine," 15-page booklet available free from Singer Sewing Machine Co., Manufacturing Trade Dept., Dept. TI-99, 149 Broadway, New York 6, N. Y. "Accident Facts," 1955 edition of the National Safety Council's statistical yearbook, may be obtained from the Council at 425 N. Michigan Ave., Chicago 11, Ill.; price, 75 cents, with discount for quantity purchases. "Evaluation of Experimental Wool Synthetic Blends in Air Force 18-oz Blue Serge," PB 111676, is a report of a series of Air Force experiments in blending wool with the new synthetic fibers; available from Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.; price, 75 cents. An earlier report of an extensive study of wool blending technology, conducted for the Office of Naval Research, is "A Survey to Improve the Utilization of Wool in Navy Fabrics," PB 111096, also available from OTS; price, $4.50. "Arthritis," directed toward factory and office workers, gives warning signals and "do's" and "don't's" when the presence of arthritis is suspected; is published by Arthritis and Rheumatism Foundation, 23 West 45th St., New York 36, N. Y.; cost not given. "An Industrial Waste Guide to the Wool Processing Industry," Catalog No. FS 2.71:W 88; Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.; price, 15 cents. "Man in Cold Environment, A Study in Physiology," PB 111716; Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.; price, $4.25. "Wet-Cold I, Effects of Moisture on Transfer of Heat Through Insulating Materials," PB 111639; Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.; price, 75 cents. "Your Company—Why an Accredited Medical Program?" Occupational Health Institute, 6 East 39th St., New York 16, N. Y.; no charge. "Automation and Job Trends," Council for Technological Development, 120 South La Salle St., Chicago 3, Ill.; single copy free. "Industrial Relations for the Southeast," by Glenn Gilman; sponsored by the Textile Education Foundation, Inc.; University of North Carolina Press, Chapel Hill, N. C.; in press, price not yet available.

News in Brief

MERCHANDISING NOTES

Cabin Crafts-Needletuft Rug Mills have become the first all-tufted carpet and rug manufacturer to be admitted to membership in the Carpet Institute, Inc., an association previously composed entirely of woven carpet and rug manufacturers.

Heberlein Patent Corp. has issued a statement emphasizing that the right to use the Heberlein patents does *not* allow the licensee to use the registered "Helanca" trademark. The name Helanca is entirely separate from stretch yarn patent rights, and cannot be used without a special licensing agreement with Heberlein.

Supima Association has launched its promotion campaign in behalf of Pima S-1, a new extra long staple cotton, with a showing for the fashion trade of dresses by designer Adele Simpson. This year's crop of Pima S-1 is expected to be about 40,000 bales.

The Wool Bureau predicts lighter, brighter colors for men's 1956 spring and summer clothes, after previewing fashions at a showing sponsored by the Clothing Manufacturers Association of the U.S.A.

Industrial Rayon Corp. has been voted a "Joshua" plaque by the Match Industry Information Bureau for the most distinguished use of match book advertising by a textile firm in 1955. Other Joshua winners in the textile field were The Wool Bureau, Avondale Mills, Canada Western Cordage, St. Louis Cordage Mills, and Waucantuck Mills.

American Institute of Men's and Boys' Wear has been organized, and is collecting a "war chest" of $5 million for the first year's advertising and public relations programs.

National Cotton Council has released figures showing that the use of terry cloth in fabrics other than towels increased from about two per cent of total terry consumption, or five million square yards, in 1947, to about 20 per cent of total consumption, or 35 million square yards, in 1954. Expanding or new uses include automobile seat covers, shorts, chaise longue covers, curtains, pot holders, couch covers, aprons, and Air Force coveralls.

Riegel Textile Corp. is merchandising a new "Fill-In" fabric; the outline of a pattern is printed on the fabric, the customer is supplied with a kit of four colors and two brushes, and fills in the colors himself. The fabric is ironed on the reverse side after the colors are filled in, and is then guaranteed washable and colorfast.

Sunset Blvd. Sportswear of Los Angeles has introduced the first knit shirt with a snap fastener closure. It is produced from a Permathal Everglaze cotton knit fabric in a range of multicolored stripes.

NITREX

makes modern "crinolines" really

STAND OUT

Modern as fashion's demand for petticoats that make bouffant skirts stand out is Naugatuck's special Nitrex® latex which gives them just the right combination of stiffness and flexibility. This is but one of an extensive family of aqueous dispersions of natural or synthetic latex and plastics produced by Naugatuck.

Each is custom-compounded for the exact job it is to perform, and is shipped *ready for use* from either Naugatuck or our Los Angeles plant. The almost endless variety of Naugatuck's Kralac®, Nitrex, and LOTOL® compounds provides the textile wet-processor a broad range of latex-base binders, finishes and printing assistants to help him obtain just the result desired... permanently!

Unlike many other materials formerly employed for these purposes, Naugatuck's latices don't wash out. The weave stability, hand and other properties they impart to the fabric *stay with it!*

Naugatuck, the world's leader in the field of latex compounding, offers you not so much a specific product as it does a *service*. A letter, wire or phone request will bring you expert processing assistance and result in the compounding of a material to fit exactly your particular processing requirements.

World's Largest Latex Producer and Compounder

Naugatuck Chemical

Division of United States Rubber Company
Naugatuck, Connecticut

US RUBBER

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IN CANADA: Naugatuck Chemicals, Elmira, Ontario

AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

Shoe Begins to Pinch (Foreign Cotton)

ON SEVERAL occasions we have ranted and raved in this space with regard to the growth in the production of cotton in various foreign countries. We have prophesied that cotton merchants and others in the United States who have been in favor of unlimited "free trade" might one day take a different viewpoint, if it should come to pass that a different ox were gored.

We are not ready to state with any degree of finality that this time has come, but we do believe that as more and more cotton is grown in other countries, and cultivated and harvested at wage rates far below the American scale, more and more segments of the cotton industry will become aware of the need to protect our living standards. Some readers may recall that just a couple of months ago we commented upon the fact that Pakistan's production of cotton for this year was expected to reach 1,596,000 bales. This, we noted, was almost enough to take care of the entire needs of the Japanese cotton textile industry.

The other day we came across some figures which show the almost unbelievable progress, if that is the correct word for it, which has been made in cotton production by several notable examples among the other countries of the world. These figures were used in an address by William C. Lott of The Graniteville Company, Graniteville, South Carolina, in a hearing before the South Carolina Fiscal Survey Commission.

They show that from the 1948-1949 crop year through the 1954-1955 crop year cotton production in these particular countries has increased as follows:

Mexico	601%
Nicaragua	5,833%
Colombia	643%
El Salvador	1,875%
Turkey	263%
Syria	1,460%
French Africa	397%
Spain	950%
Greece	253%

We have said it before, but it is worth saying again: "With America holding the umbrella over world cotton prices through its farm price support program, the growing of cotton has become a very, very profitable endeavor."

We are going to give the fur-lined shuttle to the one making the best guess as to where Japan, India, et al are going to buy their cotton in the years to come.

To The Couch, Doctor!

A professor from one of our eastern universities has had some things to say within the last several months which have opened our eyes to the dawning renaissance which may lie ahead for the textile industry. According to the report we saw, the main burden of the professor's text was that the average consumer is motivated more by his "unconscious" mind than by his conscious mind. Now, we have felt for some time that unconscious was a term which might be applied to a large percentage of the American population, whether or not consumers, but we had never considered it from the standpoint of consumer motivation.

Consumer motivation, as all readers know, is something that has sort of grown up, like Topsy, in a more or less haphazard way. Time was when a fellow walked into the country store and bought a plug of chewing tobacco simply because he happened to like that particular brand better than all the others, but what with television, radio, movies, and advertising, the manufacturer no longer can depend upon the customer to make an unbiased decision. With name brands pulling at him in all directions, you have to pull yourself, or you will be lost in the shuffle.

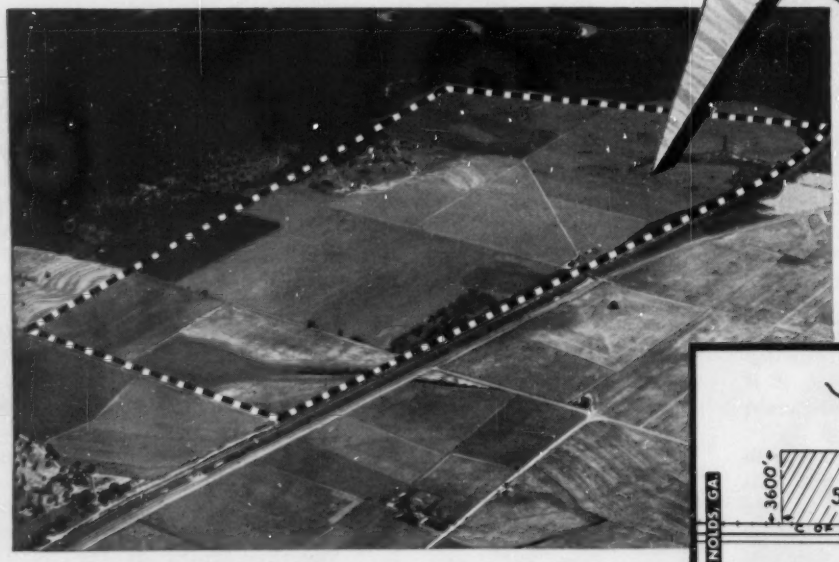
But now comes the professor with the truly devastating theory that nine-tenths of the mind's thinking is done while it is "unconscious," and this hypothesis opens up a whole new world for ad men, toothpaste salesmen, and perhaps even textile men. Think of what you could do, if you could get through to all these minds while they are sleeping. You would have a completely "captive audience," because the sleeping mind would not resist your sales pitch. Or would it?

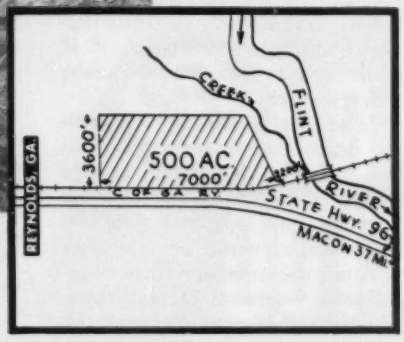
If this idea takes hold of the industry, it may be that future textile executives will come from graduates in normal and abnormal psychology, and that every New York commission house and advertising agency will provide a psychoanalysis couch for prospective customers.

Pride In Job

It is a well-known axiom among the personnel fraternity that one of the good things that a personnel program can do is to develop in

WOOL PROCESSORS!...





Ideal for SCOURING, COMBING, TOPPING OPERATION

- 500 acres of level terrain.
- Located one mile east of Reynolds, Ga., 37 miles from Macon.
- Flint River has minimum flow of 193,881,600 gallons per day at site.
- Ample underground water supply.
- Served by Central of Georgia Railway, connecting daily with 15 major railroads — fast, dependable transportation to all markets. Also connects daily with Port of Savannah for import and export operations.
- Fronting on State Hwy. 96, which connects with U. S. Hwys. 341 and 19.
- Population of 55,937 within 25-mile radius.

Get full details about this unusual choice site for your new wool processing plant. Information and maps are available from your Central of Georgia Industrial Location Specialist. All inquiries handled in strict confidence. Today, call, write or wire the address listed at right.

WRITE FOR 32-page brochure showing these sites and others now available with exceptionally desirable features.

INDUSTRIAL DEVELOPMENT
DEPARTMENT
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Department F
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The Right Way . . .

CENTRAL OF GEORGIA RAILWAY

the operative a pride in his job. This makes for a happier employee, a better product, and so on. But we wonder how many textile executives there are who have a pride in the industry of which they are a part?

Most of us are so busy trying to run our own mills that we have little time to think about the fact that we are a part of a sort of cosmic scheme of textile manufacturing which extends over some thirty-nine states. Yet, if the man at the top of the heap is not proud of his industry, then how can he expect the man or woman at the loom or the spinning frame or knitting machine to be proud of the mill in which he or she works? Just by way of example, let's look at a few facts:

Your industry employs more than a million people; it pays out more than three billion dollars in wages and salaries; with the garment industry, your industry employs more than two million people; the annual product of your industry is valued at nearly thirteen billion dollars a year; it is a huge purchaser of the products of other industries.

What these figures say is that each of us is a part of a great and dynamic industry. Let's start acting like it.

The Profit Picture

Those readers who are keeping a profit chart of the textile industry will remember that in the October issue of TEXTILE INDUSTRIES, we reported that for the year 1954 the textile industry's rate of profit on sales, after taxes, was .95%. For fear you may misunderstand the use of that decimal, we want to caution that this is less than one per cent.

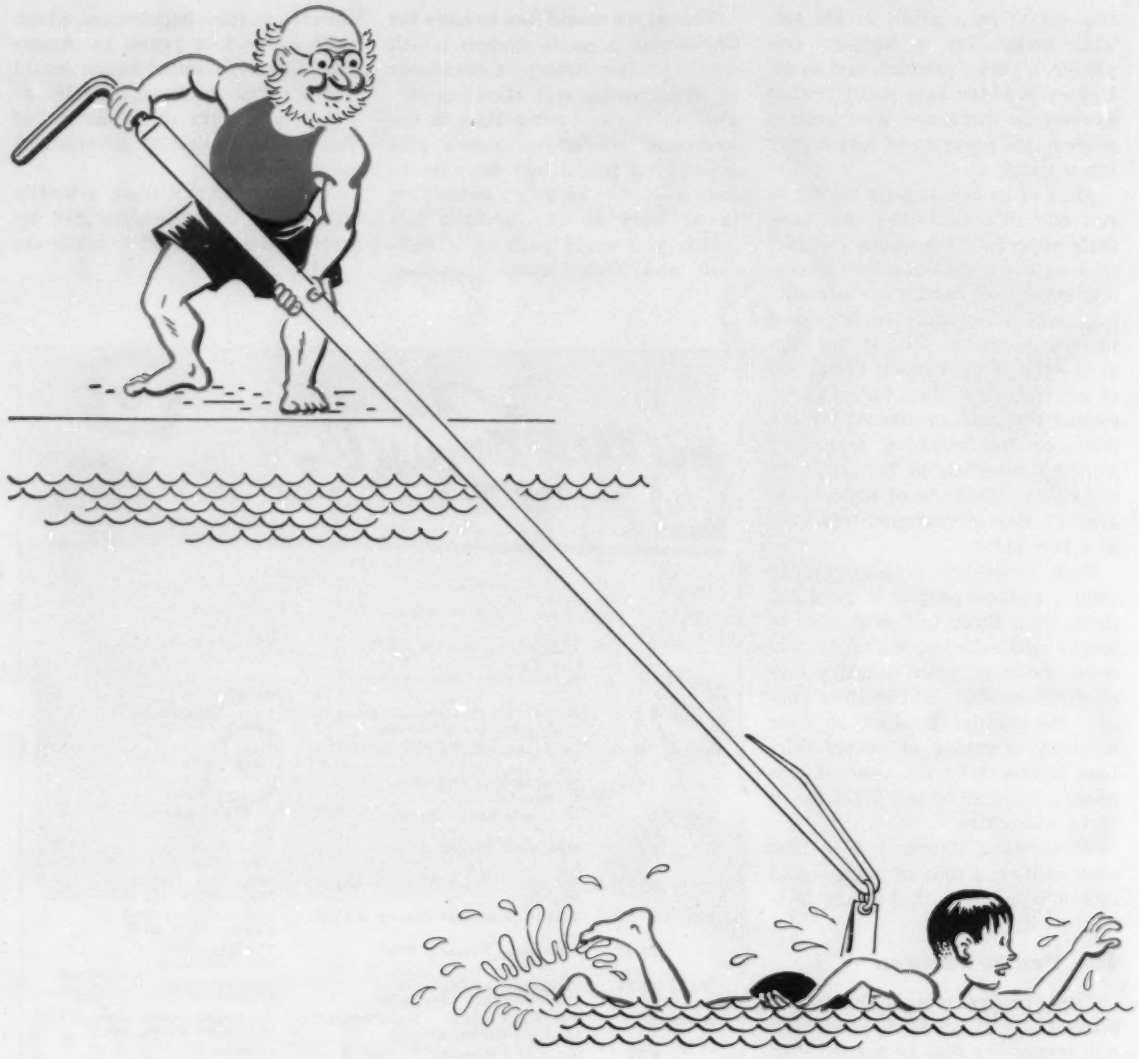
It may not last, but things look considerably better—based upon figures of the Securities and Exchange Commission for the first two quarters of 1955. The first three months the textile industry turned in a profit figure of 2.6% and for the second quarter this was down slightly to 2.4%. This is about half the average for the remainder of U. S. industries.

Nevertheless, both of the 1955 quarters look considerably better than 1954.

Things we would like to have for Christmas: A quota system which would protect American standards of living while still allowing foreign nations to earn dollars in the American market; a man's suit which you might not be able to take a shower in or go swimming in or bury in the ground, but which you could pack in a suitcase and wear upon removing therefrom; state legislatures which meet every five years; an American state department which would worry as much about America as it does about the other nations of the world; an end to government questionnaires.

And last but not least, a textile mill which could be operated by push buttons installed on a Florida beach.

Date		Event	Location
Dec.	1	Rhode Island Section AATCC	Sheraton-Biltmore Providence, R. I.
	2	Philadelphia Section AATCC	Kugler's Restaurant Philadelphia, Pa.
	3	Southeastern Section AATCC	Biltmore Hotel Atlanta, Ga.
	6-7	Society of the Plastics Industry, Coated Fabrics Conference	Hotel Commodore New York City
	10	South Central Section AATCC	Hotel Patten Chattanooga, Tenn.
	16	Western New England Section AATCC	Rapp's Restaurant Shelton, Conn.
Jan.	20	Hudson-Mohawk Section AATCC	Jack's Restaurant Albany, N. Y.
	27	New York Section AATCC	Hotel Delmonico New York, N. Y.
	30-31	National Cotton Council annual meeting	Hotel Buena Vista Biloxi, Miss.
Feb.	6	Pacific Southwest Section AATCC	Gourmet Restaurant Beverly Hills, Calif.
	15-17	7th Cotton Research Clinic	The Carolina Pinehurst, N. C.
Mar	22-23	Southern Textile Methods and Standards Association	Clemson House Clemson, S. C.
April	5-7	American Cotton Manufacturers Institute annual meeting	Hollywood Beach Hotel Hollywood Beach, Fla.
	9-12	National Packaging Exposition	Auditorium Atlantic City, N. J.
	11-13	Alabama Cotton Manufacturers Association annual meeting	Hotel Buena Vista Biloxi, Miss.
	18-19	National Knitted Outerwear Association annual convention	Waldorf-Astoria New York City
	19-21	Phi Psi Fraternity annual convention	A. P. I. Auburn, Ala.
	25-28	Cotton Manufacturers Association of Georgia annual convention	Emerald Beach Hotel Nassau, Bahamas Islands British West Indies
	27-28	Delta Kappa Phi Fraternity annual convention	Georgia Tech Atlanta, Ga.
May	2-3	The Fiber Society, Inc.	Clemson House Clemson, S. C.
	4	The Underwear Institute annual convention	
June	14-16	National Association of Hosiery Manufacturers annual meeting; also Hosiery Industry Conference	Hotel Roanoke Roanoke, Va.
	21-23	Southern Textile Association annual convention	Mayview Manor Blowing Rock, N. C.
Sept.	6-7	The Fiber Society, Inc.	The Warwick Hotel New York City
	13-15	American Association of Textile Chemists and Colorists annual convention	Waldorf-Astoria New York City
Oct.	1-5	Southern Textile Exposition	Textile Hall Greenville, S. C.
	10-12	North Carolina Textile Manufacturers Association annual meeting	The Carolina Pinehurst, N. C.
Nov.	27-30	National Chemical Exposition (ACS)	Public Auditorium Cleveland, Ohio



Perfect Dimensional Control

Control in manufacturing makes the difference . . . that's why Textile Spring-Beard Needles are uniform in size, shape, toughness, hardness, smoothness, resiliency and resistance to fatigue. A product of a special steel formula and special tempering, these are the needles that keep your knitting machines young, effective and profitable.

Textile SPRING-BEARD NEEDLES

Wire Products Division

TEXTILE MACHINE WORKS, READING, PENNA.

The New Botany

About a year ago Passaic's big and old woolen and worsted operation was in the doldrums. Today, after a face lifting that emphasized cuts in unprofitable space, time, and effort, the mill is streamlined and operating economically.

THE NEW MILL EXECUTIVE, vice-president Ernest N. Chamberlain, was responsible for making the change in only nine months. Each department was studied and changed with three things in mind: (1) eliminate wasted space, (2) eliminate costly operations, and (3) manufacture textiles only. "It's a continuous process," stated Mr. Chamberlain. "We'll never shake hands with ourselves."

STAFF PREPARED

EXCLUSIVE

IN 1952 Botany Mills Inc. of Passaic, N. J., started to lose money: $5.5 million that year, $1.5 million in 1953, and $4.3 million in 1954. As a direct result of a program set up in November of 1954 and administered by Botany's executive vice-president, Ernest N. Chamberlain, the company is now essentially competitive, employee morale is high, and manufacturing is efficient and compact.

The program was one of many facets; primarily it was based on a review of all operations and decision to cut out all excess overhead cost sources. This has resulted in a reduction in floor space from 2,000,000 square feet (of which 1,700,000 had been used) to 800,000, a reduction in equipment of one half, a reduction in annual overhead salaries and wages paid out from $2,100,000 to less than $1,200,000.

At the same time production and area employment have *increased*. Production has jumped from 92,000 yards per week to 125,000 yards per week. Employment by Botany has been reduced from about 1900 to 1600, but conversion of surplus floor space to use by other industries has brought the current total for the area to 2600 employees.

To date the program, which is finished for the most part but not completely, has cost $1,000,000.

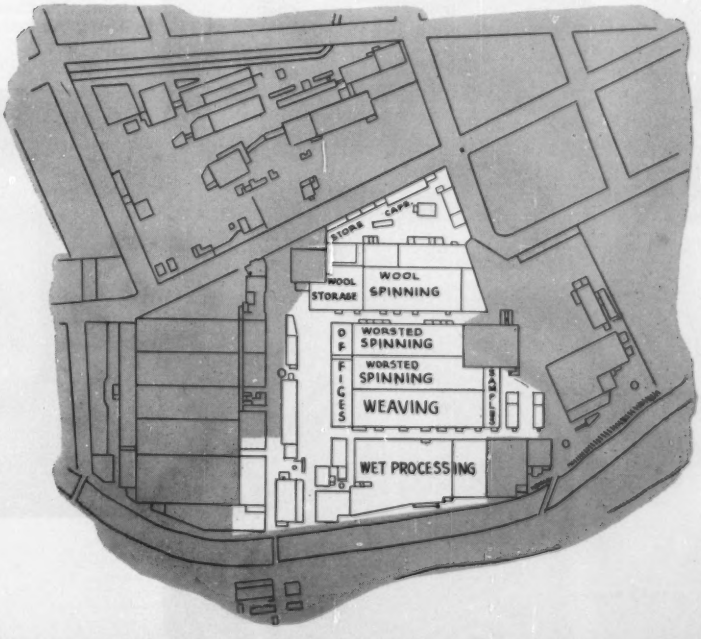
Problems. There were two main sources of company loss in 1954 and before.

In manufacturing, some of the equipment had outlived its usefulness and was housed in a sprawling multiple-building mill area. For example, dolly washers were too old, too slow, and too few, causing a perpetual bottleneck in wet finishing. The dyehouse was at least 1500 feet from the wet finishing building; materials handling was very expensive in such a set-up. Results of these conditions were poor customer deliveries and high costs.

A second area of difficulty was the large product assortment manufactured by the company. Botany "tried to be all things to all people."

In addition to weaving a mul-

THE NEW MANUFACTURING AREA is confined to 800,000 square feet and includes only the buildings shown in the unshaded area of this drawing. All other Botany property has been profitably leased. Manufacturing was previously done in all of the buildings shown on this map; materials flow was haphazard, floor space was wasted. Service operations are now placed in a tight circle around weaving and spinning as seen from labeled buildings. The central units (labeled worsted spinning and weaving) are single story structures; most others are multiple-story type.

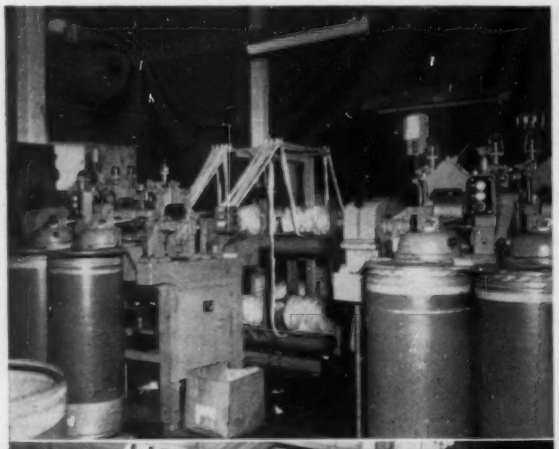


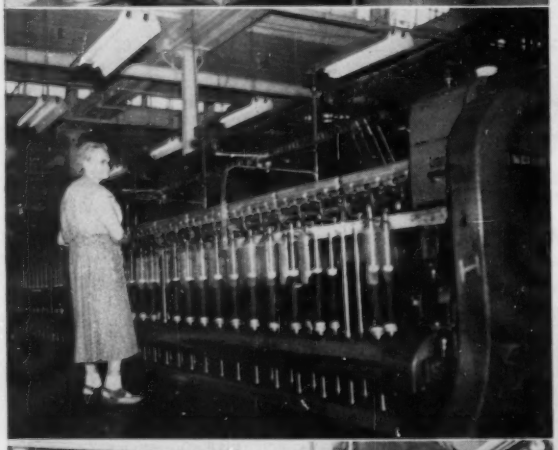
tiple price range of men's and women's wear wool and worsted apparel cloth, the company contracted for cutting a variety of Botany branded garments and administered the merchandising of them. Also, Botany produced a line of cosmetics from a by-product, lanolin. In many cases the manufacturing costs for these side-business products were higher than selling prices.

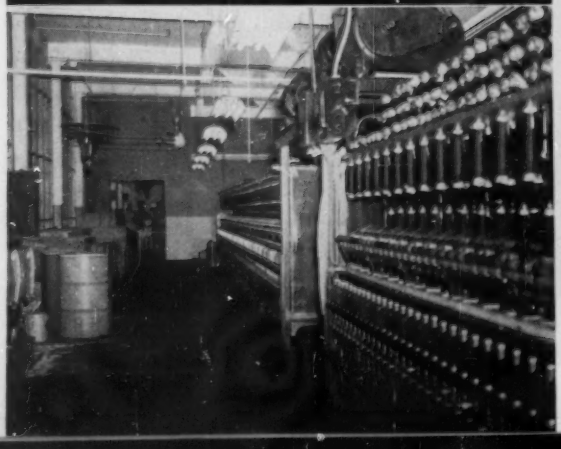
Besides an unfavorable profit and loss picture, the mill's human relations had taken a bad turn: departments isolated themselves from each other; it was literally impossible for anyone to get a direct answer to a problem; employees were indifferent, careless, wasteful.

What To Make? This question was the starting point for a pro-

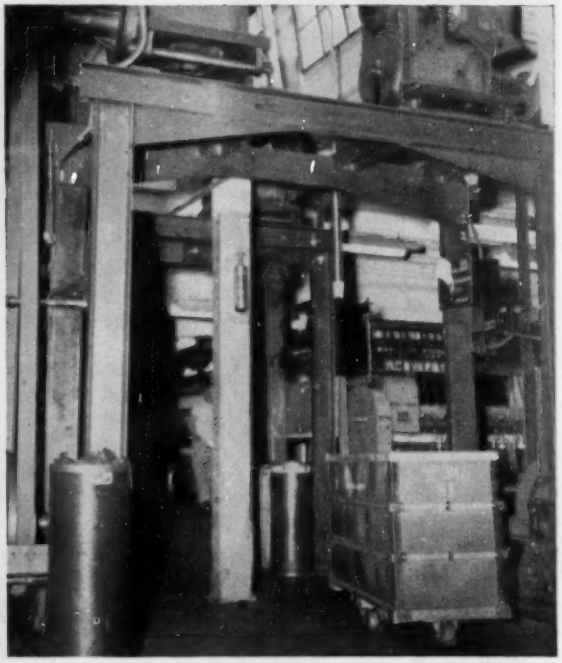
THE NEW WORSTED SPINNING LINES number two, are side by side, and consist of reducing gill and pin drafting (top photo), slubbing (center), long draft spinning (bottom), and twisting. One unit is separated by a brick wall, the other by a plywood partition between spinning and weaving erected to get better humidity in spinning, less lint in adjacent weave room. Looms formerly occupied the site of this second spinning room. Botany now buys its top.







THE NEW FLOOR SPACE ECONOMY is exemplified by these steel gantrys for overhead motors with variable drive. The drives shown here are erected over slubbers; spinning frames also are equipped with this space saver.



THE NEW STORAGE SYSTEM stresses visual control. This area is reserved for pin drafter sliver and is located between pin drafter and slubbing departments. Thus, personnel in both departments can easily see at any time how much sliver is prepared ahead for slubbing department.

gram of contraction. The decision was made to stay out of everything but producing woolen and worsted cloth. Further, lines of women's wear were to be in the quality bracket, of an upper middle price range, and featuring style rather than price incentives. Botany was to specialize in making and selling textiles.

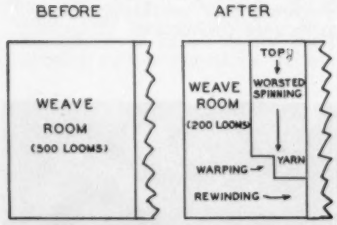
As for well established Botany brands of merchandise—hand knitting yarns, ties, bathrobes, slacks, sportshirts, mufflers, lanolin products—these were licensed to other manufacturing companies. Botany was further expanded to Canada, also on a licensing arrangement for manufacture of its fabrics [reported in TI for Oct. 1955, page 56].

Floor Space. The purpose of cutting available floor space by more than half was two-fold: to reduce diversity of manufacturing as already mentioned, and to bring operations closer together in as straight a line as possible.

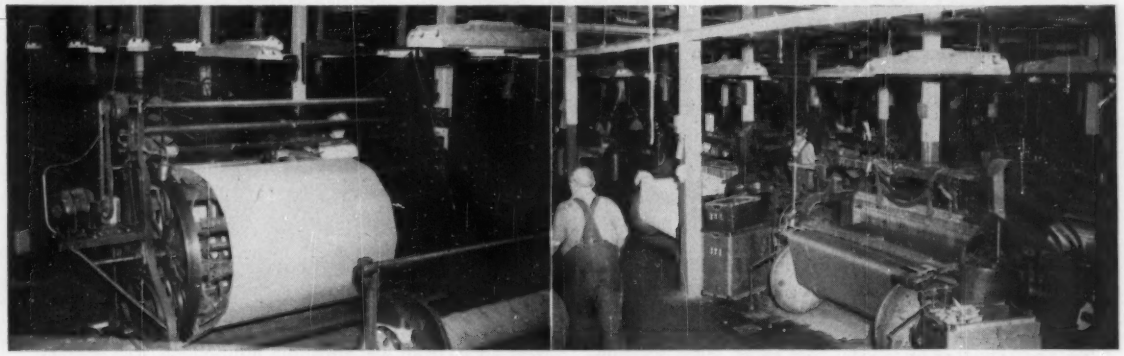
A glance at the accompanying plan of Botany-owned property will show the reduction in area that was made. The job was done in two ways: (1) by putting the hammer to obsolete equipment or otherwise disposing of machinery, and (2) by moving departments.

When the moves had been completed, there remained a group of service buildings surrounding the base manufacturing unit. This base unit consists of one weave room, two "American System" worsted spinning units, warp preparation, filling preparation, and slashing. The surrounding operations consist of offices, burling and mending, dyeing, wet and dry finishing, sample preparation, wool yarn manufacturing, raw stock storage, maintenance, company store, and cafeteria.

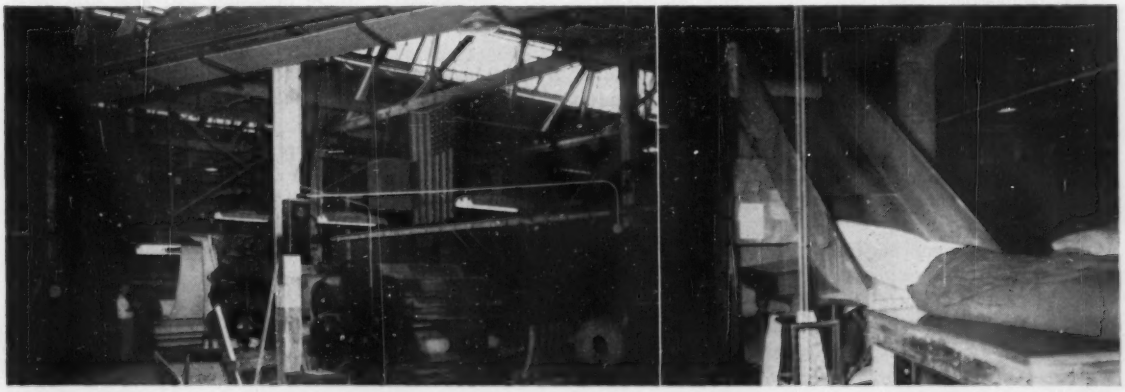
This is confined in a tight area occupying 300,000 square feet; the balance of about 1,100,000 square feet is almost all leased out to diversified industries. This leasing set-up produces a net income for



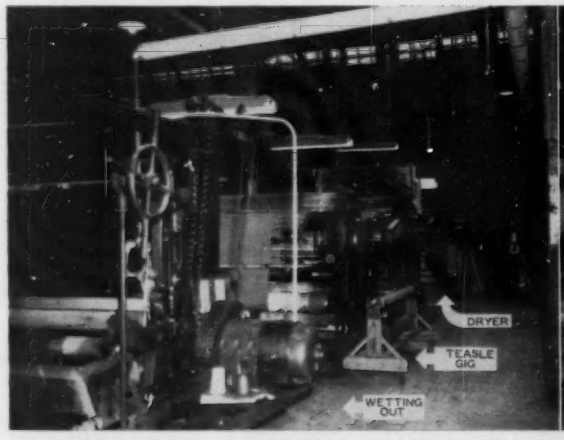
THE NEW SELECTION OF PRODUCT LINES required keeping only 234 of the company's 500 looms. Before-and-after sketch (left) shows how weave room was modified to accommodate one of the worsted spinning lines, warping, weaving, and rewinding (filling bobbin preparation). Note straight line of yarn, warp, and filling preparation and its proximity to weaving. Second spinning unit is at right of this unit. Shown below, left, is section and roller warping; at right, weave room. Some roller warping and rewinding equipment was disposed of.



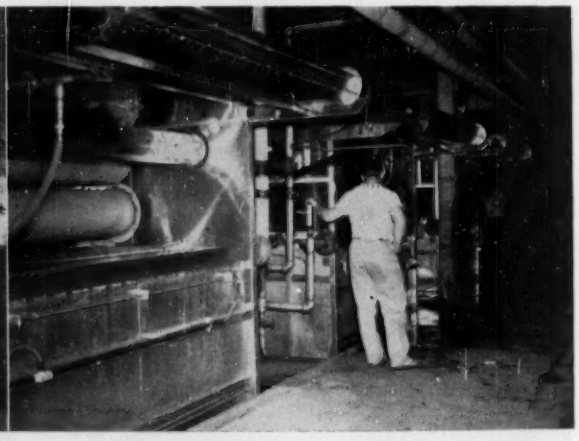
THE NEW WET FINISHING DEPARTMENT required considerable moving of distant and isolated equipment to the first floor of the wet processing building. Still to be changed is the conveyor shown at right. Now it brings burled and mended goods a long distance, but will soon be moved to fourth floor of the wet processing building and connected by an external chute.



THE NEW DOLLY WASHERS broke serious bottlenecks on fabrics requiring special handling. Note contrast with old equipment shown in right photo. The old equipment, still in use, produces four pieces per man per shift; the new, eight pieces per man per shift. The three additional machines now provide 72 more pieces a day, enough to balance production.



THE NEW FORMULA FOR MACHINE PLACEMENT calls for placing machines in tandem wherever possible, another labor and floor space saver. Here, wetting-out, teasle gig, and dryer have been hooked up.



THE NEW DYEHOUSE is adjacent to wet finishing, having been moved from a building located some 1500 feet away from wet finishing. Equipment was selected so that only the best remained.

Botany of $500,000 a year, and the lessees are employing 700 additional local operatives.

Equipment. Loomage was reduced from over 500 to 210, plus 24 sample looms housed separately. All 500 looms, for the most part W-3's, were in good condition; it was just a question of not needing that number of looms. An additional 90 looms are running at Botany's plant near Scranton, Pa.

Worsted spinning spindlage was reduced to bring yarn production capacity in line with the smaller number of looms. Both colored and white sets consist of reducing gills, pin drafters, slubbing, "American" system spinning, and twisting.

Wool spinning was not touched; it consists of 20 cards and 36 spinning frames.

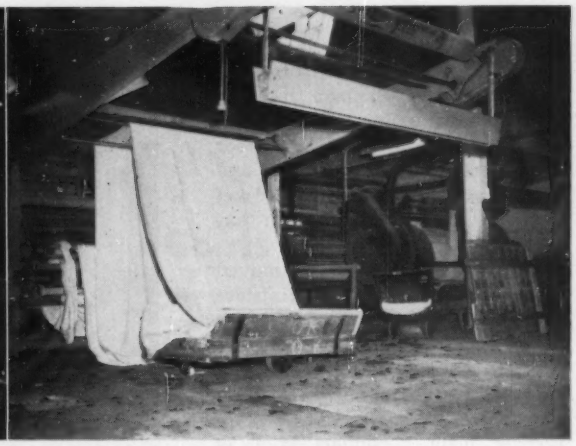
The finishing process had been the most widely scattered of the Botany operations; so it received considerable attention. Wet finishing was consolidated on the first floor of one building, the dyehouse was located nearby, dry finishing was moved to the second floor of the same building.

New dolly washers were purchased to break an old bottleneck. A new napper was also purchased. Throughout, processing machines were placed in tandem where possible, and always they were moved to be near the previous and subsequent operations.

Personnel. Stress was placed on guidance of existing personnel rather than making wholesale personnel changes; the old crew was good. Added to the staff were Mr. Chamberlain's ex-colleagues from Goodall-Sanford—plant manager E. E. Burdett, and industrial relations director Ralph Knapp.

Communications. In the old days, it was a rarity for a dyer to know what the weave room looked like

THE NEW WORK-LOAD ASSIGNMENT SCHEDULES called for restudying some of the operations. Fulling had always been run one operator to a mill. After study, load was increased to two mills per operator. The system is based on one starting up while one is running so two machines are never stopped at once.



THE NEW NAPPING MACHINE (left) contrasts with the old tandem range (right, only partially shown) in better production, less floor space required. Old equipment requires 9 to 15 runs, three men, operates at 19½ yards per minute; the new napper requires four runs, one man, operates at 40 yards per minute, and does a better job. All dry finishing is now located on the second floor of the wet processing building.

THE NEW PERCHING STATION has been assembled in one line across the center of the dry finishing department, and all goods must go through it before being packed. With this arrangement necessity for side trips for perching has been eliminated.

THE NEW ROLLING AND MEASURING SYSTEM requires only one man to roll, cut, measure and record ounces per yard. It is based on tandem arrangement of rolling machine and table. Book folding and wrapping are separate operations at end of this line.

and vice versa; departments were isolated from information regarding other departments.

In July an open house was held, during which all employees and their families were conducted on a tour through all departments.

With this as a start, supervisory meetings at superintendent and foreman levels were instituted to circulate information first hand. This has contributed to reducing the alarming number of false rumors that formerly went around the mill.

While no simple explanation can be given for a change in personnel relations, communications have been improved to the point where an employee can now get an answer to a question.

At the community level, the Passaic Chamber of Commerce was invited to meet at the mill at the start of the reorganization, and cooperation of that civic organization contributed significantly to the success of the program.

Promotion. As a result of adding new agents, stylists, and a fashion co-ordinator to Botany's selling staff, good consumer reaction has been realized through TV, radio, newspaper, and fashion show publicity. In the fall, to open the company's new line of piece goods, dress goods, and coatings at the store level, a seven-city window promotion was arranged.

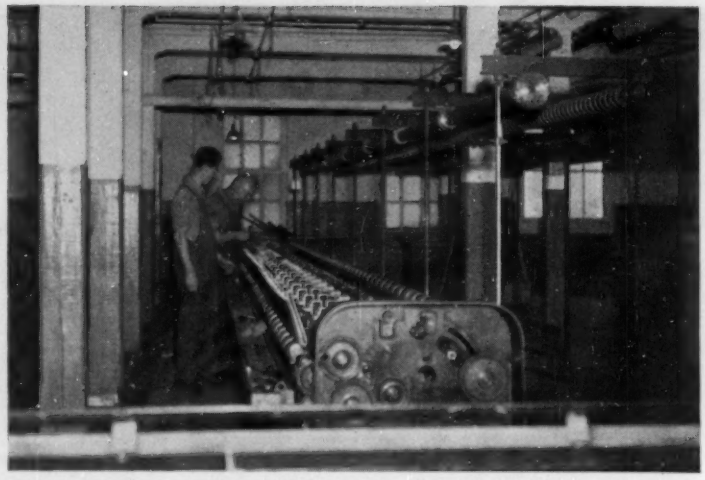
Still Changing. Although enough changes have been made to make the difference between profit and loss, work is still being done on the program and will probably never end. For example, burling and mending is now located apart

from the wet processing building, being connected by a long conveyor with the wet finishing department. It is planned that this department (burling and mending) will be moved to the fourth floor of the wet processing building and connected to the first floor wet finishing department by an external chute.

Other departments to be moved include waste, sample, finished stock, and stock dyeing.

Acknowledgement

The editors wish to thank management at Botany for its unhesitating supply of complete information regarding plant conditions prior to November 1, 1954, and its unguarded exposure of its present revamped manufacturing operation. It was through this approach of honest self-examination that the "new Botany" was born.



THE NEW SELF-EXAMINATION AND RELOCATION PROGRAM is mostly complete, but it will always be carried on to some extent to better equip the mill for changes in markets, manufacturing equipment, and methods.

ILO Finds Textile Industry Recovering in Most Countries

THE WORLD'S textile industry is continuing to recover from setbacks suffered in 1951 and 1952, the International Labor Organization announced recently.

In a report prepared for discussion at the Fifth Session of ILO Textiles Committee in Geneva, ILO officials reviewed trends in production and trade, employment, training, and wages in the industry.

The report said:

"Recovery in textile production continued in most of the countries despite setbacks mostly of a temporary nature. The index of activity in the world textile industry was nevertheless below that of manufacturing as a whole. In 1953, world industrial production was nearly twice its 1938 level whereas world textile production was about a quarter above the 1938 level.

"This disparity between the levels of industrial production as a whole and of textile production is in respect of natural fibers only. The percentage of increase of world rayon production has been more than that of industrial output."

The disparity was due in part to higher prices for cotton and wool, the report declared.

The trend of textile production varied in the different countries.

The index of activity in the European textile industry rose from 104 (1950 equals 100) in 1952 to 112 in the fourth quarter of 1953, but declined to 106 in the second half of 1954. The trend of production was particularly favorable in the Netherlands, Austria, and Western Germany.

Textile production in Canada and the United States declined.

The Japanese textile industry continued to expand, the index of production having risen from 128 in 1948 to 345 in 1953.

Activity in the Indian textile industry was maintained, despite a slight decline in the fourth quarter of 1953.

Substantial progress towards self-sufficiency in cotton textiles and jute manufactures was achieved in Pakistan.

Textile output in Latin America after falling by 4.1 per cent in 1951 and by a further 1.8 per cent in 1952, recovered by 1 per cent in 1953. This was mainly due to an increase in the production of artificial fibers, since a market favorable to higher consumption of these fibers brought new plants into production in Brazil, Mexico, Peru, and Venezuela.

In Brazil, there was expansion in both the size and the activity of the cotton textile industry in 1954.

The report said that it was expected that the world consumption of cotton in 1954-55 will at least equal the previous record figure (35 million bales) of 1953-54.

World wool consumption fell by about 4 per cent in 1954 as compared with 1953. In the United States it fell by 25 per cent. A decline also occurred in Canada, Japan, Italy, and the United Kingdom. France, Australia, and the Soviet Union recorded an increase. The rise in Russian consumption is attributed partly to the increase in the domestic clip and partly to the sharp rise in imports.

Silk enjoyed a period of rising demand. It rose sharply in 1952, despite reduction in some European silk manufacturing countries. Although consumption in the United States and Japan was somewhat lower in 1953, world silk consumption was higher than pre-war.

World trade in rayon piecegoods in 1953 (1,400 million square yards) was roughly 25 per cent greater than in 1952. In 1954 it

jumped by another 18 per cent. By 1954 exports of rayon piecegoods increased to 60 per cent over the 1950 level, whereas exports of cotton piecegoods had not quite recovered to the 1950 level.

A table attached to the report showed that the textile industry in 1954 gave employment to over 7,600,000 persons in 24 countries all over the world or about 150,000 less than in 1951-52.

Automation Is the Keystone of Coats & Clark's New Mercerizing Range

BY DON FOURMAN
Field Engineer
Minneapolis-Honeywell Regulator Co.

THE DOUBLE mercerizing range at Coats & Clark's new Toccoa, Ga., plant measures 440 feet from end to end, including dryer, making it the longest in the world. It has practically every variable that affects the mercerizing process under automatic control. For example, water and solution temperatures are controlled at all 15 mercerizer boxes, while concentration of the caustic solution is also automatically controlled.

Control of caustic concentration is assigned to an air-purge-type specific gravity recorder that uses ethylene glycol as a reference liquid. This instrument measures the concentration of the caustic solution in a circulation tank, and controls it at a constant 25 per cent by adding a strong caustic solution (43 per cent) as needed. The mercerizing solution is circulated between the tank and the range's two caustic boxes while, to maintain purity, some of the solution is constantly being bled and pumped to the caustic recovery plant.

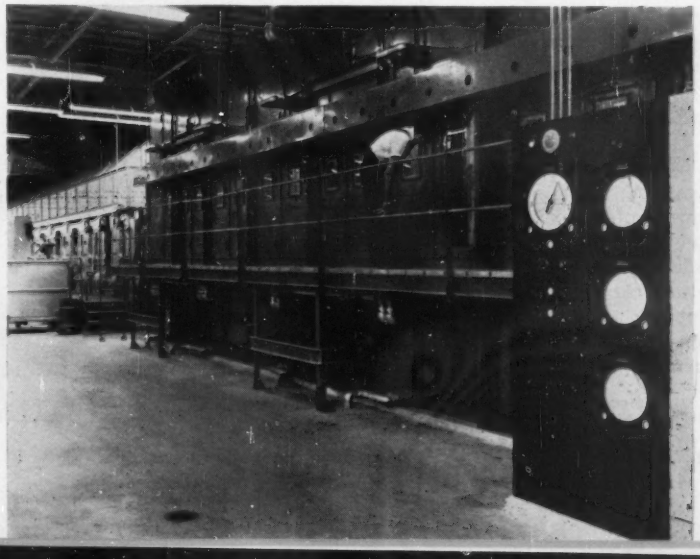
Similar instruments measure the concentration of caustic in the first and second hot wash boxes. Operators use the chart records of these instruments as a measure of the efficiency of the washing operation.

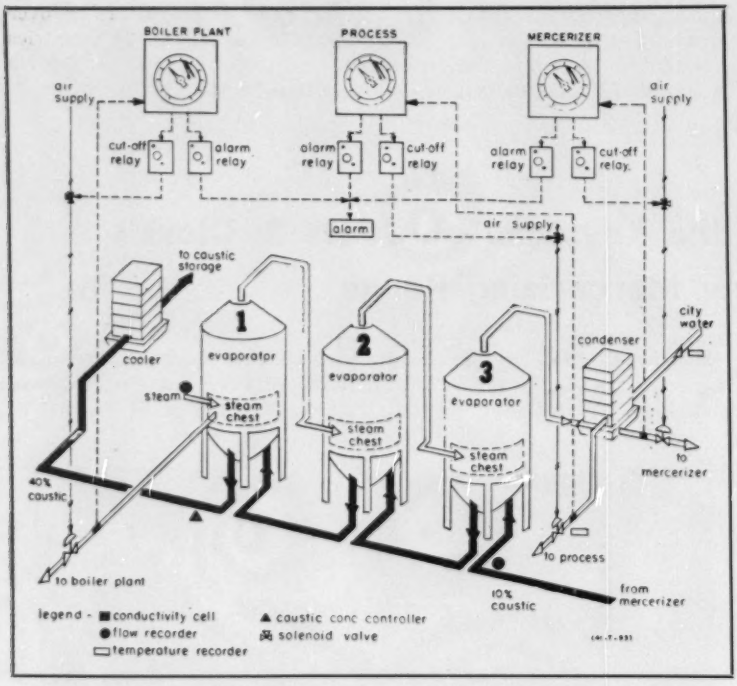
Equipped with an unusually versatile synchro-drive and electronic differential speed controls, the mercerizer can be adjusted to yield practically unlimited combinations of stretch and tension. The drive can also be adjusted while in operation to overcome any discrepancy in yarn tension as soon as it is noticed.

Moisture Control. Drying thread or yarn is not simply a matter of heating it; the moisture content must be controlled within narrow limits. A wet yarn, for instance, is subject to mildew. If the yarn is

MERCERIZING RANGE CONTROL PANEL (one of four) is shown at left. Caustic concentration and temperature controllers are for the caustic circulation tank, the first caustic box, the first hot wash, and the second cold wash.

THREE-ZONE HOT AIR DRYER is controlled by Moist-O-Graph controller and three thermometer controllers at right.





FLOW OF CAUSTIC through recovery plant, shown schematically.

too dry, on the other hand, it is brittle and breaks easily.

For this reason, Coats & Clark use a Moist-O-Graph* cascade control system for the three-zone hot air dryer that follows the mercerizer proper. In the first zone, a thermometer controller adjusts the flow of steam to the heaters to keep air temperature constant. Temperatures in the second and third zones, however, are controlled by an electronic system that measures the moisture content of the mercerized yarn or thread as it leaves the dryer. As moisture content changes, the moisture controller continuously adjusts the set points of two secondary thermometer controllers. In turn, these throttle the flow of steam to the second and third zones.

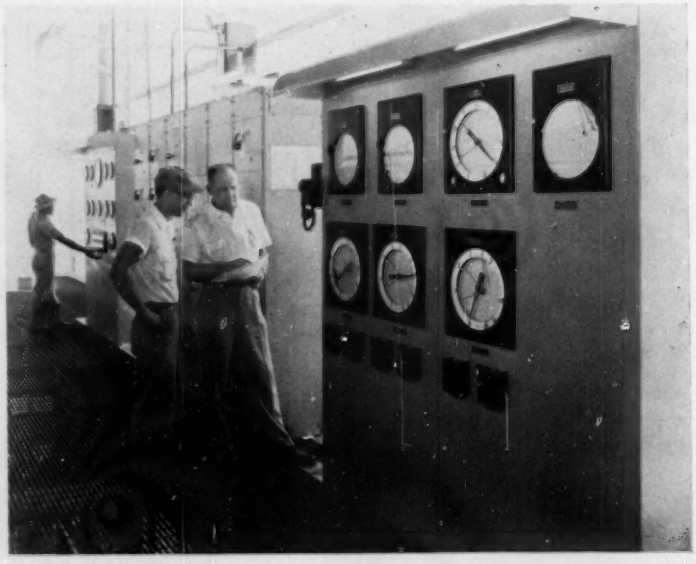
Caustic Consumption Cut 75 Per Cent. A triple-effect caustic recovery plant has cut caustic consumption at the Toccoa mill by as much as 75 per cent compared with Coats & Clark's other mills. But this is not the only economy of the recovery plant. It also furnishes as much as 300 gpm of hot process water, all the hot wash water for the mercerizer, and some steam condensate for the boiler plant. Moreover, the whole recovery plant is run by a single operator.

The accompanying schematic diagram illustrates the continuous flow through the recovery plant. Dirty caustic wash water enters the third effect at 10 per cent and is concentrated to 40 per cent as it flows through the evaporators. Steam is required only at the first effect; the second and third effects use the vapors from the previous effects. Before being pumped to storage, the concentrate from the first effect is purified by dialysis, where some 10 per cent of the caustic is taken out with the impurities. This is the only waste in the whole continuous recovery process.

Much of the economy of the caustic recovery plant stems from the by-product heat that is recovered from it as hot water for the boiler plant, for the mercerizer, and for the mill. The conductivity controllers keep these three hot water lines relatively free of caustic contamination, to prevent damage to expensive equipment.

Boiler plant equipment, for instance, cannot tolerate more than a trace of caustic. If the conductivity controller should detect too much caustic in the steam condensate return to the boiler plant, it immediately stops the flow. Here's how it happens: A back-set mercury switch on the main drive gear of the recorder completes the circuit to a cutoff relay. The relay, in turn, opens a solenoid valve in

CONTROL PANEL for the caustic recovery plant



*Manufactured by Minneapolis-Honeywell's Brown Instruments Division.

the air line to a diaphragm control valve in the steam condensate line. This action applies air pressure to the direct-acting control valve, closing it, and interrupting the flow of steam condensate to the boiler plant. For safety reasons, the design of the cutoff relay is such that it must be manually reset before the control valve can be opened again, even if the caustic contamination has been eliminated.

Simultaneously, the conductivity controller energizes an alarm silencing relay that turns on a red signal light and an alarm. The alarm can be silenced by pushing a button in the relay, but the red signal light stays on as long as there is caustic contamination. When the contamination is corrected, the signal light goes out and the alarm circuit is automatically reset.

The other conductivity controllers operate in the same way, except that a much greater percentage of caustic can be tolerated in the mercerizer wash water before the alarm is sounded and the flow is cut off.

Over $500,000 for Air Conditioning. The Toccoa mill's 857-ton main refrigeration system supplies conditioned air to all the dry finishing areas in the mill. It also cools the water and caustic solution for the mercerizer, and the liquor for the bleaching machines. A second system serves the cafeteria and offices, while a third, much smaller one, supplies the physical testing laboratory with air that is strictly controlled at 70 F and 60 per cent rh.

In the wet finishing areas of the mill, air is exhausted, cleaned, cooled by evaporation, and recirculated. Automatically controlled atomizers are located in other areas of the mill to increase the humidity of the air where needed.

Mill's Retail Fabric Shop Is Money Maker

THE SCHWARZENBACH Huber Co.'s sales testing "laboratory" in Altoona, Pa., now is on a self-sustaining basis, according to an announcement, due to the popularity of the firm's solution-dyed fabrics.

The textile company established a little mill-end and factory-seconds shop at its Altoona weaving plant about six years ago as a place to determine first-hand the consumer appeal of its goods.

The shop's sales have risen to an annual gross of about $100,000 since the mill began weaving solution-dyed yarns. A full-time clerk-manager has been hired for the first time to keep up with the traffic.

This volume is achieved in 600 square feet of low-value floor space without advertising. There isn't even a sign on the building, and the shop is more than a mile from any other retail establishment.

"Word-of-mouth about this place has spread as far as India and we handle mail orders regularly from as far away as Texas and Florida," reported Carl E. Schott, manager of the Altoona plant. "Often a chartered bus pulls up in front of the mill and lets out 30 or 40 women who have come 50 miles or more in a group to buy fabric."

"The jump in business undoubtedly is due to the fact that we are weaving Worstrella and Chromspun," the manager said. "Plant employees see and feel the new fabrics right on the loom and spread the word."

Everything in the little retail shop at the Altoona plant is sold as seconds and as is, although an adequate stock is kept regardless of the ebb and flow of rejections from the examining room. Even at such prices, however, the place is a money-maker — Mr. Schott estimates that the profit runs to 50 per cent of gross.

How to Estimate Battery Needs For Electric Trucks

BY K. A. VAUGHAN
Gould-National Batteries, Inc.

ONCE a year the plant engineer, plant superintendent, master mechanic or other person responsible for maintenance of electrically operated lift trucks and tractors may be required to submit an estimate for budget purposes for the purchase of new batteries that will be needed in the coming year.

The projected amount will be affected by several considerations such as the age of batteries now in operation, the rate of future production and probable number of shifts, the calibre of maintenance and charging.

It is at this time especially that the person responsible for batteries is glad he had adequate records. A study of battery records will give a clue to the number of batteries that might need replacement.

Battery age alone will not give a reliable figure. Intensity of service should be considered. A battery that operates two shifts per day will not have the life expectancy in years of one that only works intermittently.

The quality of battery maintenance will greatly affect battery life. The difference between the life of a well-maintained battery and a poorly cared for battery may be as much as 100%. The dollar saving of good maintenance is appreciable.

When batteries have been in use several years, a check test is required to determine individual battery condition with accuracy. This is accomplished by a test discharge.

In the past, a test discharge was an expensive, time-consuming project because the battery electrolyte had to be adjusted to 1.275 specific gravity in the fully charged condition. Using correction curves and test procedure developed by and available from Gould-National Batteries, Inc., the procedure is

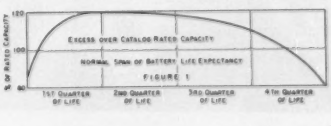


FIGURE 1

much simpler and cheaper.

The curve in Figure 1 shows the relationship of battery capacity to life expectancy. The test discharge will give battery capacity from which can be determined battery life. As battery capacity approaches 80%, the rate of decrease in capacity is sharper. When capacity falls below 80-85%, it should be watched carefully and plans should be made to replace it.

Weaving Defects (Part 7*)

BY CLYDE O. CRONIC

EXCLUSIVE

Note: Bold numbers in text correspond to those on accompanying photos

Crooked Selvages

1. Bunch too large.
2. Shuttle eye choked with waste.
3. Too much tension in shuttle.
4. Filling build wrong (wrong stroke and taper at spinning).
5. Beam bearing cap loose.
6. Crooked or loose gudgeon on loom beam.
7. Crankshaft box loose on one end.
8. Slack and tight sides on loom beam.
9. Crank arm loose on one end.
10. Take-up roll bearing loose or worn on one end.
11. Harness too low or high on one end.
12. Take-up roll journal crooked or worn.
13. Breast beam loose on one end.
14. Reed and handrail loose on one end.
15. Worn or wrong temple burr; temple set improperly.
16. Drag roller and whip roll out of line.
17. Stop motion girt out of line (should be level and square with lay).
18. Cloth roller not going up same on each end.
19. Worn cloth roll bearing.

Not shown in photographs:

20. Too much power on one side of loom.
21. Eccentric stud loose or worn.
22. Tape selvage motion not set or timed properly.
23. Take-up guide rod or tension rod worn.

Singling in Filling

One end breaking back on twister (ply yarn). Heavier traveler in twisting would break one end when singling occurs.

On regular spun yarn, singling can be made by operatives in picker room through spinning (when double roving is run).

Bad Start-Up after Pick-Out

Pick-out operative should have a sharp comb and one that has no burrs or hooks on it. She should never drag comb across the warp ends, but should pull the comb parallel with the warp ends. If ends are broken out, tie them down before starting the pick-out.

Pick-out operative should start loom after pick-out, run for few inches, and let weaver inspect work; this permits responsibility for good cloth to remain on the weaver.

Slack Warp Ends (Creepers)

Caused by kinks in warp yarn from spooler and warper. Slip knots and weak yarn will also cause creepers.

Double Warp Threads

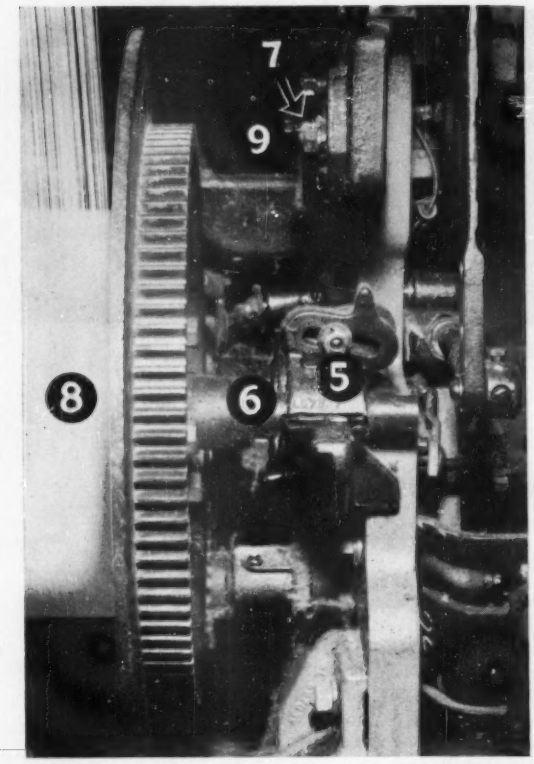
(two ends drawn as one through same heddle eye)

Misdraw at drawing-in frame.

Slip knots at spooler or warper (come loose and make laps on section beam at slasher, later causing extra ends to appear in weaving).

Double ends should be caught at first of warp when loom is started and smash man or weaver inspects fabric. THE END

*Previous parts appeared in May, June, July, August, September, and October, 1955, issues. This is the final installment of the series.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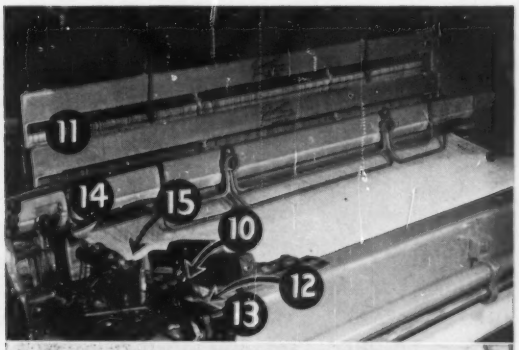
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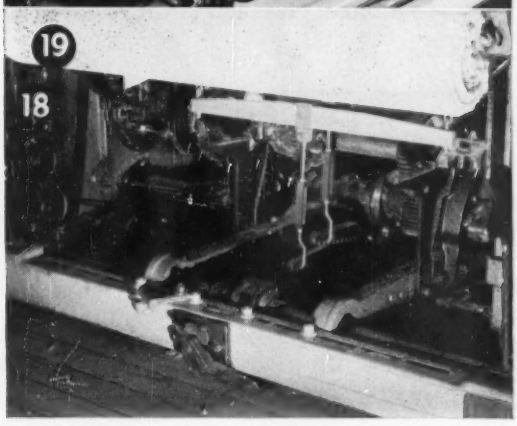
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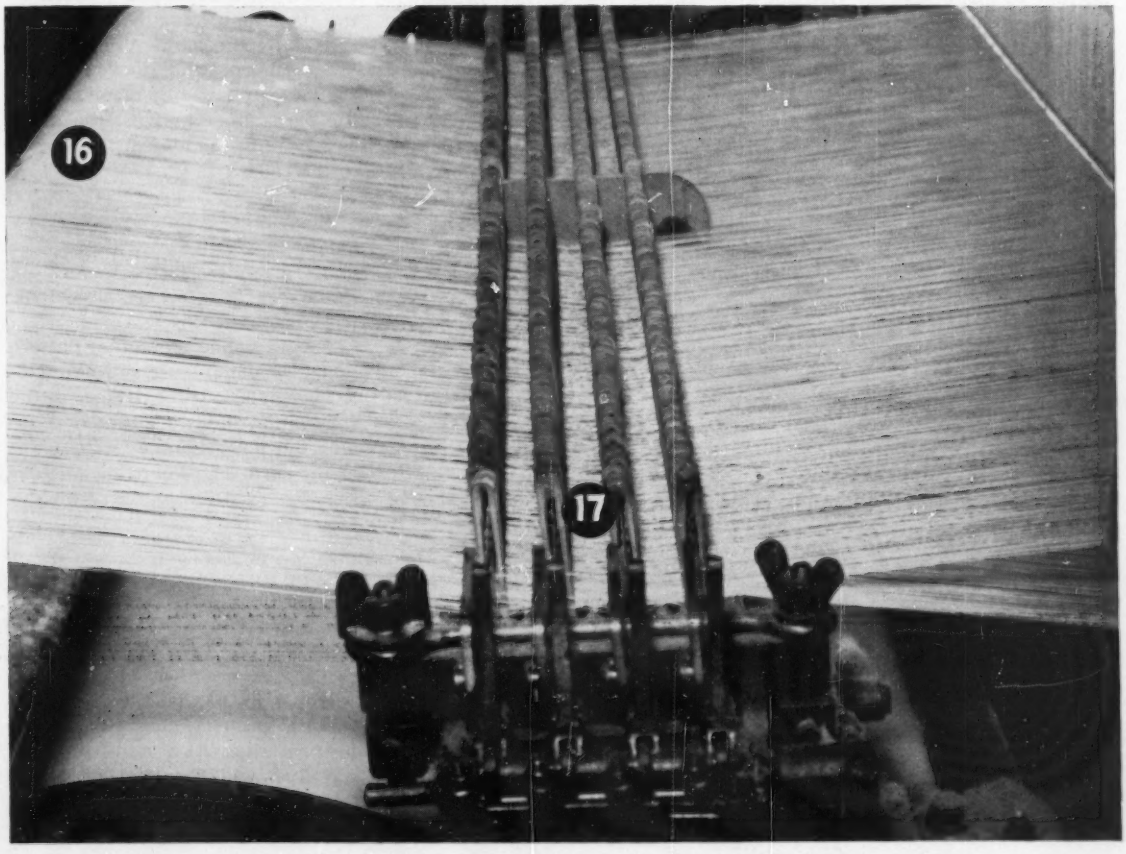
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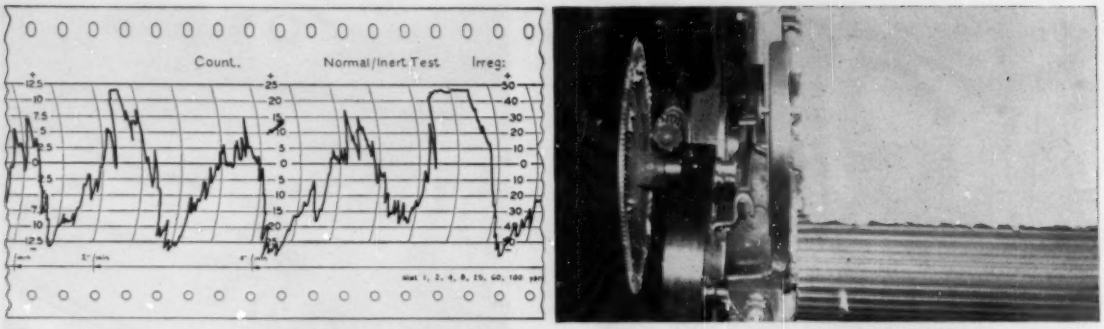


FIGURE 1. Card sliver pattern caused by card draft gear improperly meshed into feed roll disk.

How One Mill Traces Bad Work

BY F. G. ERNEST

EXCLUSIVE

IN USING the evenness tester to detect sources of uneven yarn, it has been our experience that the most economical procedure is to concentrate on card sliver, drawing sliver, and roving. This is not to say that yarn should not be tested at all, for it is important to make sure by frequent samplings that the finished yarn is maintained within specified tolerances of evenness.

However, in tracing down and remedying extensive causes of unevenness, it is obviously possible to cover a much greater area of production capacity by testing a large proportion of stock in the preparatory stages. After all, in the average mill one card will put out the same production in pounds as do several hundred spinning spindles. The same is true of drawing deliveries, while one roving spindle sometimes supplies as many as 30 spindles in the spinning room.

This is particularly true of long draft spinning, where a relatively few roving spindles will produce many pounds of coarse rovings. Thus, when one defective card or drawing delivery is located and repaired, the result is more far reaching than that obtained by the discovery of one bad spinning spindle. Yet, it takes no longer to test stock from the former than from the latter.

Roving Frames. In testing roving for evenness, it is frequently possible to find cyclical fluctuations which extend further back than the roving frame. Hence, a roving evenness test is at the same time a check on drawing and card performance. Inasmuch as drafts on roving frames are ordinarily fairly short, testing a relatively small amount of roving will usually disclose such prior defects if they exist.

By applying the known drafts to the length of the repeated fluctuation, a simple calculation will point to the process where the irregularity originated. An analysis of the draft distribution on any machine will frequently show the defective roller, gear, or whatever part may be the source of the unevenness.

Cards. It is sometimes argued that defects originating at the cards are for the most part canceled out by subsequent doublings. This may be true, but because of the frequency with which cards are doffed, it doesn't take many defective cards to scatter uneven stock all over the mill. For this reason we test sliver from each card at regular intervals. It is surprising how frequently cards which apparently produce good sliver, and which are considered to be in good repair by the operating personnel, are proved by the tester to be putting out defective work. After a study of the tester diagram it is almost always possible to locate the defect.

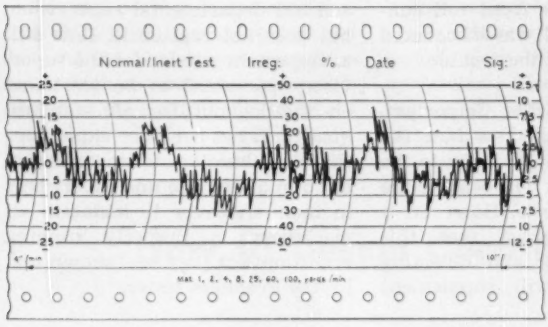
Picker Laps. Of course, it is important that the picker lap going into the sliver which is being tested be reasonably free from short-range cyclical fluctuations. Otherwise, a repeating pattern in the lap may obscure the cycle caused by the card. A long-range or a nonrepeating unevenness in the lap can easily be recognized in the card sliver and can be separated from the defects traceable to the card.

Mechanics. Following are a few examples which illustrate the use of the evenness tester in locating the exact area where defectives were originated:

Figure 1 shows a regular pattern which repeated itself approximately every 100". The extremes of the fluctuation indicated that it probably did not originate in the front of the card. The following calculation disclosed the source of the defect:

Draft from the feed roll to the front of card: 102
100" ÷ 102 = .96" of lap
Feed roll circumference: 2.25 x 3.1416=7.07
.96" ÷ 7.07 = .136 rpm of feed roll per .96" of lap
Draft gear: 22 T. Feed roll disk: 160 T
22 ÷ 160 = .138 rpm of feed roll per tooth of draft gear.

It was found that the draft gear was not properly meshed into the feed roll disk. As a result the feed roll disk and the feed roll hesitated slightly as each tooth of the draft gear slipped a little as it



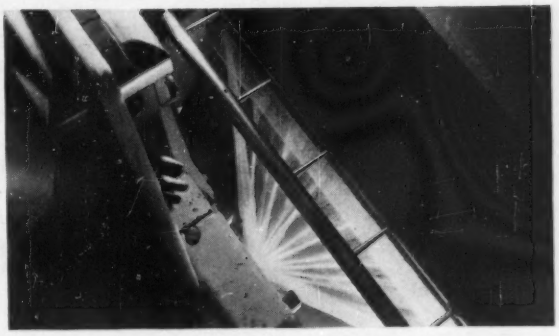
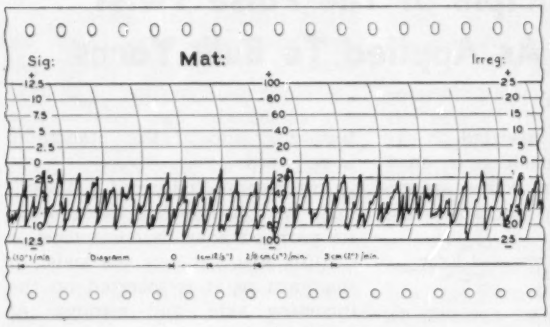


FIGURE 2. Card sliver pattern caused by slightly faced area on doffer clothing.



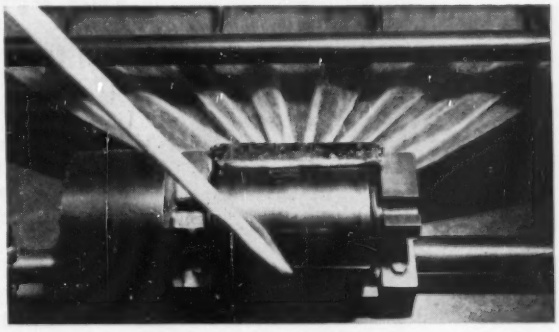


FIGURE 3. Short-cycle card sliver pattern was caused by improperly set calender roll.

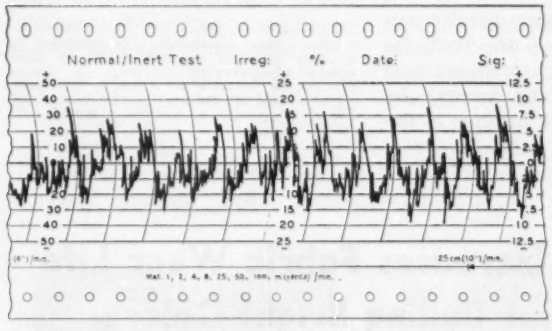
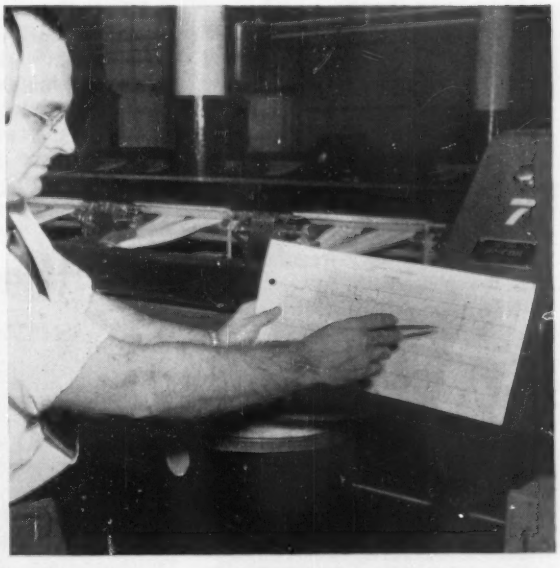


FIGURE 4. Diagram from a bobbin of roving tested during a routine check of an entire roving frame. A front roll out of round on the drawing frame at right caused the trouble.



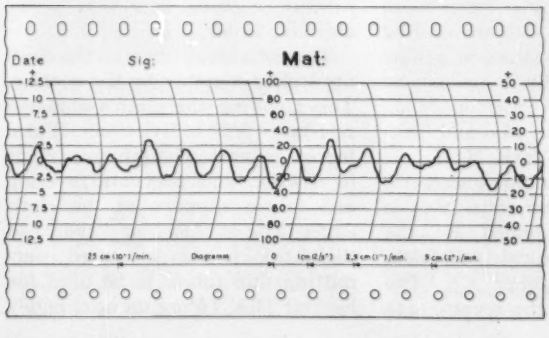


FIGURE 4A. Diagram of the same bobbin represented in Figure 4, but with the tester operating at "inert test," showing how the tester disregards short-term variations while running "inert."

turned the feed roll disk. This slippage and the resulting hesitation was so small that it was easily overlooked in ordinary visual inspection of the card.

Figure 2 represents card sliver which fluctuated less violently but very regularly approximately every 99″. The recorded diagram suggested that the defect was caused in the front of the card. The following calculation led to the discovery of a slightly faced area in the doffer clothing:

Doffer circumference: 27″ x 3.1416 = 84.8″
Tension draft: 1.17
Sliver per rpm of doffer: 84.8″ x 1.17=99.2″

Figure 3 illustrates a short cycle in card sliver. It repeats itself approximately every 14.7″, which indicates that the cause must be in front of the card. The following calculation pointed to an improperly set calender roll:

14.7 ÷ 1.17 (tension draft) = 12.8″ of sliver delivered by doffer calender roll.
Circumference of calender roll:
3.1416 x 3.9 = 12.25″

This defect was easily located and remedied.

Figure 4 shows the diagram of a bobbin of roving which was tested during a routine check of an entire roving frame.

Figure 4A represents the same bobbin with the tester operating at "inert test." While running "inert," the tester is oblivious to all minor variations, and clearly brings out the nature and size of major fluctuations.

An analysis of this diagram showed that the pattern of unevenness was very regular and that it repeated itself every 32.4″ of roving. Inasmuch as the entire mechanical draft on the roving frame was only 8.8, it was unlikely that this variation originated there.

Instead, we suspected that the source would be found at the drawing frame. The following calculation showed us where to look for it:

32.4″ of roving ÷ 8.8 (Draft on roving frame) = 3.68″ of drawing
Tension draft on drawing frame = 1.015
3.68″ ÷ 1.015 = 3.63″ of drawing prior to calender roll
Front roll diameter on drawing: 1 1/8″
Front roll circumference = 1.125″x3.1416 = 3.53″

This gave us a strong indication as to where to look. An immediate check of all drawing frames was made by the card room personnel, supplemented by the use of the evenness tester. A front roll running out of round was discovered to be the cause of the trouble.

Supervision Still Important. These actual cases show how the application of known drafts to the recorded diagrams will point to the source of the defects. However, it must be emphasized that this method of testing and detecting defective work will supplement and aid departmental supervision, but does not replace it. It is still as important as ever for the supervisory personnel to be alert and on the lookout for off standard quality. It has been our experience that the laboratory testing program has stimulated the line supervisors in their endeavor to maintain all machinery in properly running condition lest they be "shown up" by the evenness tester.

The Principle of The False Twist Spindle As Applied To Bulk Yarns

FALSE TWIST is inserted on one side of a stanchion in an S direction as shown in the accompanying drawing, because the

yarn is twisted in an opposite direction (Z) on the other side of the stanchion. If the stanchion is removed, the yarn contains no twist at all.

After twist in both directions is allowed to run into the yarn for a while, if the yarn is moved past the point of looping around the stanchion, the twist inserted at the incoming side of the stanchion, is removed.

In the manufacture of a stretch-bulk yarn in which a thermoplastic yarn such as nylon is used, a heating element sets the twist in the yarn as it is inserted on the incoming side, and removal of twist on delivery side opens the permanently crimped yarn — the result, bulking and elastic properties.

Note: This description was contained in a paper delivered recently by Henry Richardson of Universal Winding Co. before the Textile Division of A.S.M.E. The principle is used in Universal's new Model 550 Superloft machine to produce a stretch-bulk yarn.

Coating Increases Fabric Wear Life without Dulling Bright Colors

A THIN coating of synthetic rubber latex increases the wearing qualities of rayon cloth more than four times without dulling the cloth's bright colors in a new process developed by Poughkeepsie Finishing Corp. of Paterson, N. J., in conjunction with Midland Textiles Inc. of New York, N. Y.

According to the announcement, the special synthetic resin latex is made and compounded by the Naugatuck Chemical division, United States Rubber Co. The latex is applied to the reverse side of the cloth. It is a permanent coating, not affected by chemicals used in the finishing operation or by cleaning fluids.

The individual fibers in the cloth are locked together by the coating. This steps up the cloth's abrasion resistance four to five times. It also increases seam strength, important in sewing, and prevents raveling and fabric slippage at the cloth edges. The stiffness or "hand" of the fabric is also increased, permitting thin fabric to be used for heavier jobs. (*More on next page*)

But the coating is not air-tight. The cloth is still porous and so can be used in upholstery work where a fabric that "breathes" is needed. Nor does the coating give the cloth an odor.

Smooth-surfaced fabrics in plaids, dobbies, stripes, and solids, woven from multifilament rayon by Midland Textiles, are now being coated with the new process. In no case has the lustrous color in the cloth been diminished by the coating.

The coated cloth is now being used in automobile seat covers. It is also being tested in furniture covering.

How to Design Cord Effects in Fancy Fabrics

BY OSBERT HUGHES

EXCLUSIVE

DRESS GOODS, shirtings, apparel fabrics, and similar cloths are often ornamented and embellished by the use of a heavy cord as decoration. Such cords will add texture and interest to any fabric to which they may be applied. Cords can be introduced either warp- or filling-wise, and may be made in several different ways. Outlined in this article are some of the most commonly used methods by which cord effects may be obtained.

Crammed Reed Dents. Probably the simplest warp cord can be made by crowding the ends in certain dents of the reed at regularly-spaced intervals. For instance, if a fabric is normally reeded two ends per dent, an occasional dent with three ends will produce a cord at that point.

Fig. 1 is a portion of a weave diagram showing plain weave regularly reeded two ends per dent with cord ends reeded three per dent. These cord ends may be the same yarn as the body of the goods, or can be accentuated by the use of a different color.

If the ends used in the cord are somewhat heavier in count than the rest of the warp, the raised cord effect will be still further emphasized.

Occasionally on cotton or woolen goods a decorative cord consisting of two ends of rayon or other filament yarn will be introduced. As filament yarn tends to be smaller in diameter than its equivalent cotton or wool count, these filament cords will show a thin place in the goods unless reeded as in Fig. 1. In this case two ends of filament and one end of ground warp will be drawn in one dent, the remainder of the warp being drawn two ends per dent.

Weaves With a "Flat." Another method of introducing cords in the warp is to weave two ends as a "flat," i.e., two ends weaving as one. With the rest of the warp weaving as single ends this will form a distinct raised cord.

Fig. 2 is a weave diagram of a 2 x 2 twill fabric with a flat cord. The same method can be used for plain weave or any other basic ground weave.

Here again, if heavier yarns are used as cord ends than those of the remainder of the cloth, the cord effect will be still more pronounced. This diagram shows the warp reeded uniformly two ends per dent. However the cord ends may if desired be drawn in with one ground end in the same dent, making three ends per dent in the cord, with the remainder of the warp drawn in two ends per dent. This will still further emphasize the raised effect of the cord ends.

Satin-Weave Cords. A different type of warp cord effect can be obtained by weaving a small number of ends, say four, six, or eight, as a satin weave, reeding the satin

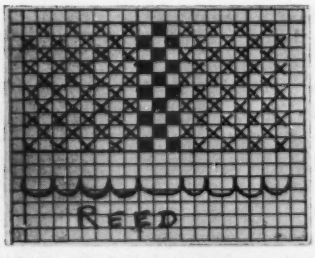


FIG. 1. The simplest warp cord is made by cramming certain reed dents. Here is an example of a plain weave regularly reeded two ends per dent with cord ends reeded three per dent.

Note: This design and the others used to illustrate the cord structures discussed in the article were prepared accurately but quickly to save the designer's time—just as designs are made every day in the mill. Therefore the squares are not filled in evenly for "beauty" as they would be if intended for use in a textbook.

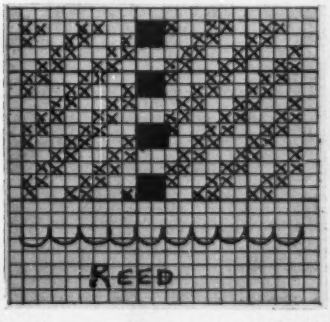


FIG. 2. Weave diagram and reeding plan for a 2 x 2 twill fabric with a flat cord. The diagram shows the warp reeded uniformly two ends per dent; however, the cord ends could be drawn in with one ground dent to further emphasize the cord.

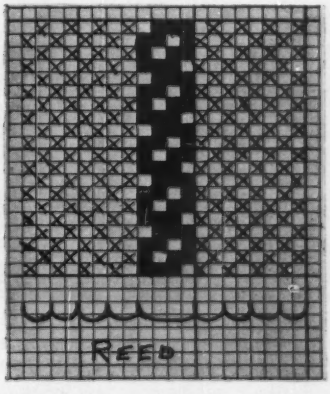


FIG. 3. Weave diagram and reeding plan for a four-harness warp satin, reeded four ends per dent, on a plain weave ground reeded two ends per dent.

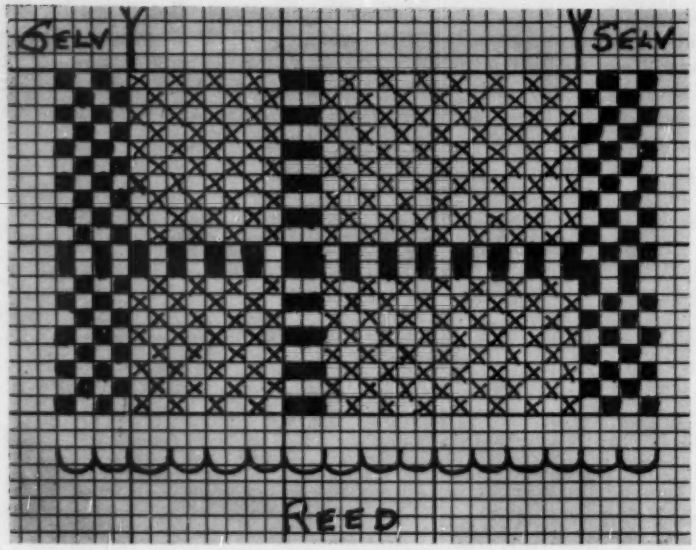


FIG. 4. A filling cord balanced against a warp cord by weaving two picks in one shed.

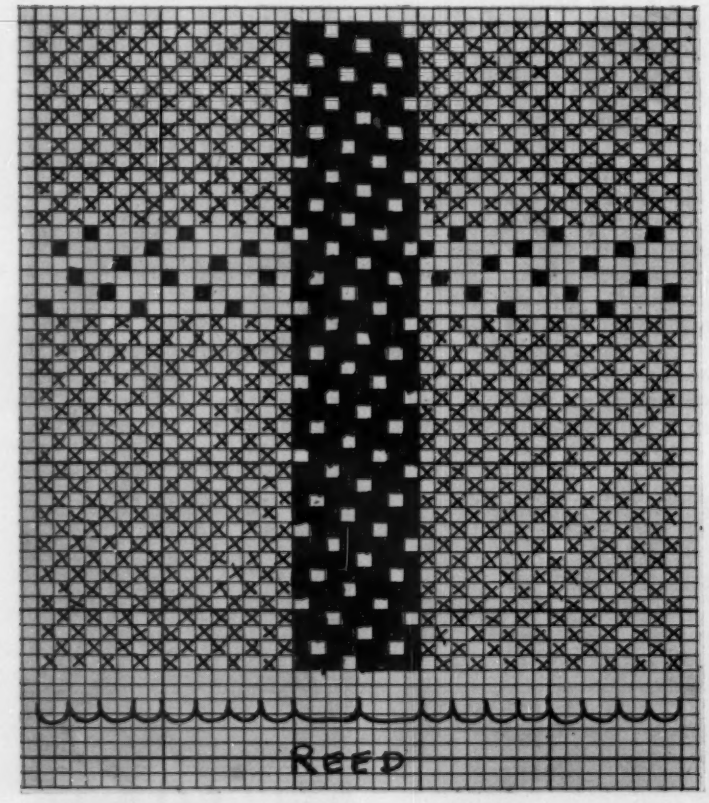


FIG. 5. Weave diagram showing use of a five-harness satin in the warp cord and a six-harness satin filling cord; both the warp and filling cords are woven with double density.

ends with twice as many ends per dent as the body of the goods, which will likely be plain weave. Either a four- or a five-harness satin weave is usually used for this type of cord, depending on the number of picks per inch in the fabric.

When making warps for a satin-cord fabric the satin ends should be run with a little more tension at the slasher than the rest of the warp is given. This will compensate for the difference in take-up in weaving and allow this type of fabric to be woven from one loom beam.

Fig. 3 shows a cord of four ends woven as a four-harness warp satin, reeded four ends per dent, on a plain weave ground reeded two ends per dent.

Satin cords need not be of heavier yarn than the remainder of the warp; however, a difference in color will accent their raised appearance, should such an effect be desired. A satin cord will of course require a dobby to produce the satin weave.

Balancing Warp and Filling Cords. When filling cords are to be made, to balance against the cords in the warp, a dobby loom will be necessary.

Fig. 4 shows a weave diagram of a filling cord made by running two picks in a shed, balanced against a warp cord produced by weaving two ends as one. Such filling cords are frequently woven as "double density;" in other words the pick pawl is raised for one pick at this point, thus inserting double the normal number of picks per inch for the filling cord. This will cause the two cords, warp- and filling-wise, to have the same appearance but does increase the over-all picks per inch in the fabric.

Another method of balancing filling against warp cords is to have one warp cord end of two-ply yarn, the remainder of the warp being single yarn. For instance, if the cloth has a 30/1 warp yarn the cord will be made with 30/2. The balancing filling cord is made by weaving two picks in a shed, as shown at Fig. 4.

This type of arrangement is frequently used when box looms are available, the cords being composed of different colors than the remainder of the warp. Whether or not extra picks as "double density" need to be used will depend on the construction of the goods. If the picks per inch are equal, or nearly

so, to the sley, double density in the filling will probably be necessary. Satin filling cords will usually be woven with double density in the picks.

Fig. 5 shows a weave diagram using a five-harness satin in the warp and a six-harness filling satin, both the warp and filling cords being woven with double density. The purpose of the longer satin floats used in the filling is to equalize the appearance of the cords, the sley in this particular fabric being higher than the picks per inch.

If the sley and the picks are about equal, then the same satin weave may be used for both cords; however, when there are considerably less picks per inch than sley this change of weave can be used to equalize the effects. Also a four-harness or a six-harness satin can be made to "lock" into plain weave, while this cannot be done with a five-harness satin. This "locking," while not essential will give a smoother and better-appearing break between the plain weave ground and the satin cord, especially filling-wise.

Cord Yarn Heavier Than Ground Yarn. Occasionally a fabric will be made with a warp cord of a very much heavier yarn than the remainder of the warp. This will give a very distinct and raised appearance to the cord, but will also introduce some other problems in warping and weaving.

One such fabric, a dress goods plaid, is illustrated in Fig. 6. The ground warp and the filling are 35/1 cotton, while the heavy cord is 8/2/2 cotton, equivalent to 2/1 yarn. This cord is made with one end of 8/2 black twisted with one end of 8/2 white, thus giving a variegated effect to the corded stripe.

Several problems arise in making such a fabric; these may be overcome by methods which will be described.

Because of the extreme difference in counts of the two warp yarns used, the cord ends are woven from a different loom beam than the body of the warp. This enables the weaver to adjust warp tensions to suit the take-up on both beams.

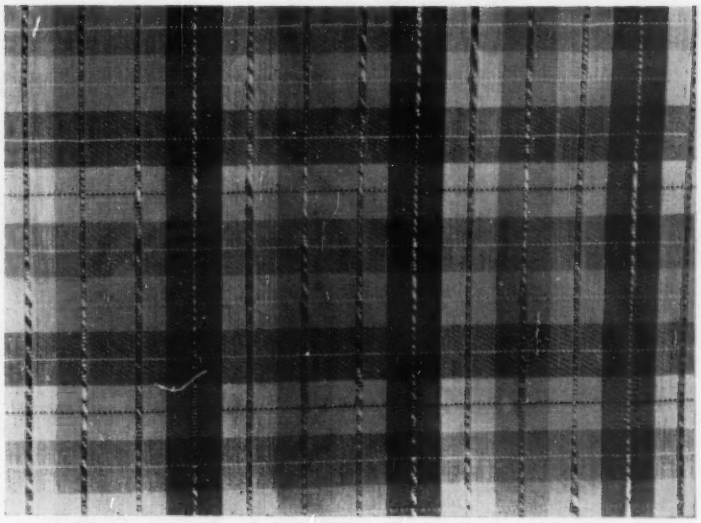


FIG. 6. Dress goods plaid made with ground warp and filling of 35/1 cotton yarn. The heavy cord is 8/2/2 cotton, made with one end of 8/2 black twisted with one end of 8/2 white. About two-thirds actual size.

There are two ways in which this type of fabric may be reeded. If a plain reed is used the ground warp will likely be drawn in at least three ends per dent, and the cord end one per dent. This will permit the use of a reed coarse enough so that one dent will be wide enough to permit the passage of the heavy cord end without being distorted.

However, if this method of reeding gives too reedy an appearance to the goods for them to be acceptable, then the alternative would be the use of a pattern reed. These reeds can be made to order, and have a fine setting for the ground ends so that they can be drawn in two ends per dent while the dent for the cord, drawn one end per dent, is made sufficiently wide to take this heavy yarn. It will be necessary to plan a reed to fit the warp pattern intended and give these specifications to the reed maker.

Probably this type of heavy cord yarn should be made into a warp without knots. This poses another problem, as the average twister bobbin will hold only a short length of yarn on a heavy count such as this. Ring twisters with large rings, and certain types of cordage twisters, may have large enough bobbins to eliminate this problem, but the average ring twister doff will be so low in yardage as to permit only very short knotless warps to be made. For instance, an 8½ x 2½ twister bobbin will hold approximately 0.30 lb of yarn, and since 8/2/2 yarn has 1680 yards per pound, this means that one twister doff will be approximately 500 yards long and the slasher set limited to this length.

Converted Slubber Twists Larger Bobbins. When larger packages of knotless twisted yarn are desired, to make longer warps for cord fabrics or for other purposes, it is quite feasible and a simple matter to convert an ordinary slubber, or other roving frame, into a twister. This can easily be done by mounting an ordinary twister creel on the back of the slubber in place of the sliver cans, and removing the drafting rolls so that only the front rolls will be operating.

Certain gear changes may be necessary and should be calculated to suit the frame's gearing and the yarn to be twisted. This will convert the slubber into a twister with very little expense, and with the large packages very much longer knotless warps may be made. For instance, a 12 x 6 slubber runs a 46-ounce bobbin, which means that on 8/2/2 yarn a bobbin containing approximately 4800 yards

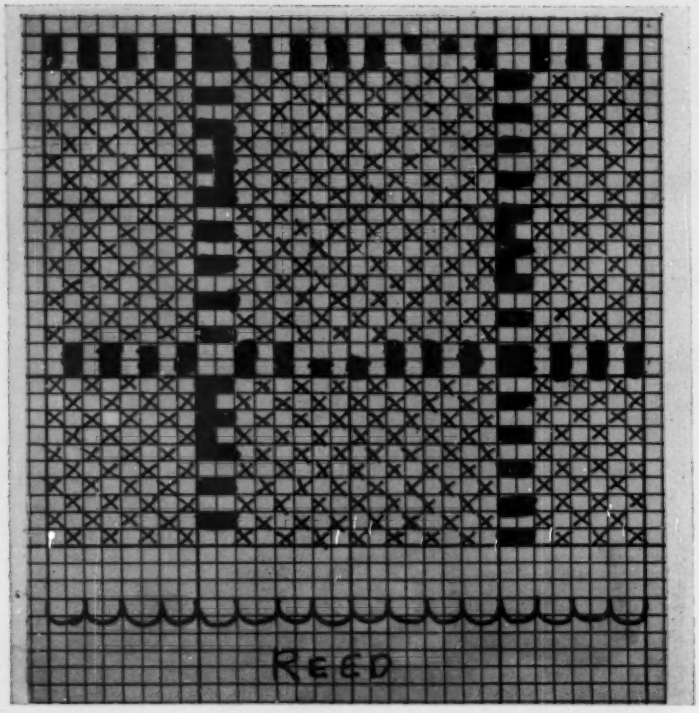


FIG. 7. Weave diagram showing a plain-weave cord with warp-wise and filling-wise floats added to give additional texture and refinement to the cord. A dobby is required to control the floats.

can be made. Such a package will permit entirely satisfactory loom beams to be made.

The expense of converting a slubber into a twister should be quite low, and will eliminate the need for a costly investment in special large-package twisters.

Warp Breakage Low With Heavy Cords. Very little warp end breakage in weaving need be anticipated when using these heavy four-ply types of cords. Should a cord end break, in order to avoid tying a knot the weaver should be instructed to weave the cord from a spare end until sufficient yarn is available on the beam, when the warp end should be drawn through the reed, thus avoiding a knot in the cord in the fabric.

Heavy Cords Do Not Affect Selvages. The cords will not usually affect the standard selvages used for the fabric in which the cords are introduced. Sometimes a tape selvage is used for filling cords, especially when they are closely spaced together. More often a combination of plain weave and tape selvage will be used; this requires only two extra harnesses for the selvage. This type of selvage is included in the weave diagram for warp and filling cords shown at Fig. 4.

Other Cord Effects. Other variations of these cord effects may be employed. For instance, a plain weave-cord either warp- and/or filling-wise may have occasional floats introduced to give additional texture and refinement to the cord. This will require a dobby to control these floats. Such an effect is shown in the diagram of Fig. 7.

These floats, especially if the cord ends are of a different color from the remainder of the goods. will stand out very distinctly, and usually the cords will be drawn in on several harnesses so that the floats may be introduced in a staggered formation across the goods. Careful planning of these staggered floats plus good color combinations will often produce a fabric using ordinary yarns that will give a good simulation of an expensive fancy yarn in the cords, at a very much lower cost.

The variations possible are limited only by the imagination of the designer. The use of cords will add interest and texture, and elevate the most ordinary staple fabric into a style bracket with greatly enhanced sales appeal and merchandising possibilities.

"Dry Printing" Method Gives 3-D Effect to Wamsutta Fabrics

DRESS FABRICS printed by what has been termed a "revolutionary new process that achieves three-dimensional effects" were introduced at a special showing recently by Wamsutta Mills at its new headquarters and showrooms in New York City.

Developed in Italy, the process is said to involve a "dry printing" method and the use of a very fine screen. The fine screen and elimination of "wet inks" are reported to preserve all details and highlights, with the actual imprinting taking place without blurring or overlapping.

"We have given considerable attention in our new line to this process because it adds a new and important dimension of quality to fabric printing," said a Wamsutta executive. "It is equally remarkable from a style standpoint for by removing many of the technical limitations of reproduction it enables designers to achieve new and extraordinary effects for finer styling.

"More important to us," he said, "this process, with its fidelity of reproduction, gives these prints a cleanness, clarity, and depth which, when coupled with fine Wamsutta fabrics, provides a dress print of all around high quality."

The Refinisher—Buffer Between Wool Mill and Cutter

STAFF REPORT

The garment cutter hires a refinisher to be his "eyes," and to shrink goods as delivered from the mill. The refinisher must understand the needs and limitations of both his customer and the mill and pass judgment accordingly. Here are some of the questions asked of a refinisher, Leonard Glickman of World Sponging Works, New York, N. Y., by New England woolen and worsted mill men at the 1955 third quarterly meeting of the Inter-State Textile Association, held recently at Lenox, Mass. Answers to these questions are those given by the speaker.

Function

Q.—What is the function of the refinisher or sponger?

A.—He is the eyes of the cutter-up. He checks for shading and other imperfections, and marks each with a white string. If a piece is graded in any category other than a first, he makes an adjustment with the mill. He also takes the stretch out of the goods by either steam or London shrinking. The refinisher doesn't necessarily care if the goods contain numerous defects; he grades according to the needs of the cutter. If, however, he passes a piece and it is cut up into defective garments, he, the refinisher, is responsible.

Examining

Q.—Does the refinisher do any mending after examination?

A.—No, he just examines.

Q.—Under what light does a refinisher examine?

A.—Where possible, under daylight. At other times, our plant (World Sponging Works) uses fluorescent light. There are three 72-inch tubes mounted across each perch.

Q.—How much does a good examiner do in a shift?

A.—Between 4000 and 4500 yards, depending on the type of goods being examined.

Strength

Q.—How would you check for strength required of a 15-ounce napped cloth?

A.—Traditional way of doing this is to run a grab test; woolen goods for apparel should break at a minimum of 1½ times their weight, worsted goods at twice their weight.

Shading

Q.—How do you differentiate between chemical and mechanical shading?

A.—Uneven pressing, where a soft side of the roll presses harder and shades the goods, or uneven drying at the mill finishing department will cause mechanical shading. The reprocesser can remove these temporary shadings by decating; if he cannot, the chances are that the shading was caused in dyeing.

Q.—How serious is shading?

A.—It is the worst offender as far as the cutter is concerned. But again it depends on the needs of the cutter; if the style for the year calls for large areas of cloth being exposed or draped, shading is more important. Claims for shading vary almost directly with the style trends from year to year.

Allowances

Q.—How are allowances for defects arrived at?

A.—We work on a penalty system. Penalties are broken down in units of ⅛ yard. If we find eight of these penalties the goods are graded an "A" second; a "B" second has 12 to 15. This means that just a string in the selvage of the goods does not tell the whole story. Each string must be analyzed as to the severity of the defect it marks, and penalties weighted accordingly. If we feel that our customer can get a first quality cut from the goods, we pull the string out.

Q.—What is the significance of a selvage-to-selvage defect?

A.—This means that the cutter must cut out this section of the piece and create three ends that he may not be able to use. We usually penalize such defects 4/8's.

Q.—If a piece of goods contains warp streaks, would you accept it more favorably than you would, say, eight strings?

A.—The eight strings would be favored. A cutter must take his chances and cut streaky goods all or none at all; fillingwise defects marked by the strings can be cut around.

Q.—Is a fillingwise defect 12 inches in length penalized the same as is a selvage-to-selvage defect?

A.—Yes, the cutter must still cut all the way across the goods to eliminate it.

Q.—What is the shortest usable length that a men's wear cutter can normally handle?

A.—Usually ten yards.

Shrinking

Q.—Why do refinishers sponge goods containing defects for which the mill is penalized?

A.—They don't, or shouldn't. Sometimes defects such as streaks are latent and don't show up until after shrinking.

Q.—When the refinisher steam-shrinks on a decater, how much goods are loaded in the machine at once?

A.—This varies. World Sponging Works loads one piece (about 70 yards) with a 250-yard leader.

Q.—What can be done in refinishing about stains?

A.—When decating, the refinisher can hold back on the vacuum and cut down on the leader to minimize the luster and prevent accentuating any stains in the goods.

They Licked the Flood

A handful of men at Allentown Converting Co. made fast and effective preparations for Hurricane Diane's deluge, and had the plant running three days later. This story is published to show how careful planning can reduce damage and prevent long shutdowns in face of nature's potent weapon—flood.

STAFF PREPARED
EXCLUSIVE

AT 6 PM THURSDAY, August 18, 1955, the sun was shining in Allentown, Pa.; by 7:00 AM the following day there was an average of 19 inches of water covering the ground floor of the Allentown Converting Co., with water outside the vital filtering plant standing at 5 feet 5 inches.

Earlier on Thursday, heavy rains "up the line" in the Lehighton district had started the flood; all-night rains in the entire Lehigh Valley area raised the Lehigh River to a raging 23 feet 4 inch flood crest which rolled massive boulders like pebbles, smashed bridges like kindling, and inundated almost everything on low ground. Allentown Converting Co. is a dyeing plant located only a few hundred yards from the Lehigh River.

Forewarned by a similar situation in 1942, Plant Manager Frank Bohl and Engineers James Belding and Larry Clewell realized early in the game what could happen and charted the rise of the river. When the flood seemed inevitable, they directed an emergency crew of about 20 men in a series of measures aimed at pure water, steam, vital motors, and textile materials, which saved all but a negligible quantity of yarn and piece goods belonging to customers, and mill property and equipment.

As soon as the flood waters receded, the plant was cleaned up, and by Monday, the third day after the flood, cloth and yarn was being dyed and shipped on a "business as usual" basis.

RIVER BANK outside the plant vanished, and water entered the buildings at an average level of 19 inches (top photo). Three days later water was gone, the plant cleaned up, and production in all departments was back in full swing (bottom photo).

Thursday Night. Upon being advised at 7 PM of a State Police-issued news bulletin warning of heavy rains upstate and possible flood stage Mr. Bohl kept a close watch on the river depth, which was then about nine feet — 2 feet above normal. This was the key to the planning that followed. The course of the water rise was charted whenever and however possible until about midnight, when the river level indicated that the flood was inevitable in the Allentown area.

At about 8 PM a few men were called into the plant and preparations for warding off the blows of the flood were started — just in case. The most vital spot in the plant area was tended to first, the water filtering plant. This unit supplies the company's most used and precious commodity, pure water with which to dye and finish yarn and cloth. This building was

Allentown Call-Chronicle

AERIAL VIEW of Allentown, Pa., at height of flood caused by the torrential rains which accompanied Hurricane Diane. Allentown Converting Co. is off the picture in the foreground.

3½ feet below the average elevation of the plant site; it had been hit hard in the 1942 flood.

A flood gate was put up against the door of the unit, and sandbags were packed between door and gate to protect the big motors, pumps, and filters from water damage. One of the 30-hp motors which normally pumps filtered water from the clear well running the length of the filter to the softening unit was shunted from the piping normally used to do this job, and new piping was cut and fitted to remove any flood waters from the floor of the filter house to the outside of the building.

At about 9:30 PM, dyestuff barrels were elevated in the drug room. The river was up to about 13 feet by 9:45, and an hour later the decision was made to move as much goods as possible off the ground floor of the plant. This consisted of grey and dyed yarn and cloth located in three storage

CRITICAL FILTER PLANT was kept dry inside even though water was above window level. Top photo, taken in 1942 but with water at the same level as during the Diane flood, shows inundated building (extreme right center). Bottom left: master mechanic Larry Clewell points to water level on flood gate which held water out. Right: pump which was diverted from softener to keep filter plant dry.

areas of the various mill buildings. Most of the goods were moved up to second floor areas by men on plant elevators. Later on, an Arrow Carrier trailer truck was loaded with finished goods and dispatched from the river area. What couldn't be moved upstairs, mostly goods in process, was raised up onto anything: tables, hand trucks, and machine parts. Cases and bales which couldn't be handled in that manner were placed in such a manner that the least damage would occur to them.

Just before midnight, the fires in the boilers were pulled and steam pressure relieved. This was done to allow the boilers to cool off and prevent an explosion if and when water hit them.

Friday. After midnight, the crew continued their preparations, moving systematically and calmly from one job to the next. Critical motors were lifted from pits and floor level at such equipment as tenter frames, padders, and boil-off machinery. This was all done by hand; a 25- and a 50-hp motor in the filter plant were hoisted by pulley. All dye boxes were filled with water to prevent them from floating away.

By about 3 AM the rising water started to come in the mill yard. The exhaust pump that had been rigged in the low lying filter house was started and kept running continuously for the next 36 hours. The flood waters rose to a height of 5 feet 5 inches outside of the filter house, but this pump, exhausting water at the rate of 500 gallons a minute, kept the water level inside to only a few inches. The crew stationed in the filter plant went in and out by means of a ladder leading out of a window to a fire escape.

Luckily, a-c purchased power was not cut off during the flood; wires of a plant manufactured d-c system were, however, under water.

At about 3:50, the telephone switchboard and low objects in the offices were lifted. By this time, most of the crew which had been working at the plant had gone home to check their own families and dwellings. Mr. Bohl made a complete tour of the plant, closing all doors to keep as much mud out as possible.

By about 4 AM all of the mill was flooded; by about 7 the flood crest was reached and it stayed that way all day Friday.

Saturday. By Saturday morning the water had receded sufficiently so that it had all left the plant; it was replaced by several inches of mud. Although there were 50,000 gallons of water stored in the fire tank, and an additional 70,000 gallons of process water in other elevated tanks, the canal which paralleled the flooded river, and from which the plant drew its water was, oddly enough, dry. Until this was repaired by Allentown Converting Co. and canal employees working in swim suits, water was drawn through drinking fountains which were fed by a deep well. Garden hoses and street brooms were located, the hoses attached to drinking fountains, and the mud was washed and swept from the floor of the plant. Chloride of lime was sprinkled on damp floor areas and in corners.

By 10:30 Saturday morning, plant employees started to handle goods. Boilers were refilled, fires started, and at 4 PM steam was available for use.

Sunday. At 8 AM Sunday, all goods that had gotten wet were started into work to be desized, scoured, and dried. Because of the way bales of piece goods were stacked, some pieces were picked out of the bales dry; pieces at the bottom were uniformly wet.

Monday. A regular, full day was worked Monday by the mill's 300 employees; preference was given, however, to salvage of the small quantity of goods that had gotten wet. Scouring of wet piece goods continued (and was completed by Tuesday, and dried by Wednesday).

After processing a small amount of wet yarn, both the yarn and piece dyeing departments of the plant which had been flooded 48 hours before, were in full production just as if Diane were only a name for a mythological Roman goddess.

Food for Thought on Package Design

THERE IS no magic formula for the development of a successful package — each must be continually tested and re-rated in the light of changing consumer preferences, according to Fred W. Spannagel, packaging specialist associated with American Viscose Corporation.

In a recent speech, entitled "Your Package and Tomorrow's Market," Mr. Spannagel pointed out that packaging in tomorrow's market must conform to the consumer's desire for greater shopping speed, more self-service, and greater convenience in the store and in the home.

"Taking the past as a guide post," Mr. Spannagel stated, "we know a few things about what the consumer wants in packaging. She wants product quality, convenience, and quick identification. Since shoppers are confronted with hundreds of products, they want easy-to-spot labels. They dislike hard-to-open containers, and packaging failures of all kinds. Unsatisfactory packaging features mean *no repeat business.*"

According to Mr. Spannagel, the package of tomorrow will be more strongly related to advertising. It will be more colorful, and more informative, with an increasing trend to show size, color and style of the product, and pertinent descriptive information — all factors tending to educate sales clerks as well as customers.

"In the market place, each package creates a pattern of color and image sensations which have a strong influence on the shopper . . . . the package has to shoulder a great deal of the selling job . . . ."

Mr. Spannagel also pointed out

that with growing self-service and self-selection selling, more emphasis will be placed on display, with the ultimate consumer decision depending on the manner in which merchandise is exhibited, what is said about it on near-by display materials, and the variety of choice available.

A package must take into consideration consumer motivation, or the impulses which prompt the act of buying, Mr. Spannagel explained. "Some of the buying motives are: envy, hunger, pride, vanity, gain, curiosity, fear, habit, imitation, social advancement, personal advancement, or merely keeping up with the Joneses," he pointed out. Determine the buying motives and then give the consumer the information she wants right on your package.

Mr. Spannagel then outlined some of the important merchandising aspects of packaging: A package must be strong enough to withstand normal handling during shipment and distribution. It should reflect the quality of its contents, attract attention, and look clean and sanitary. It should be informative, with clear, concise and legible printing, and should conform with all legal requirements. The package should also fit the available display area, a factor sometimes neglected by manufacturers who service department and variety stores which have little patience with "package monstrosities."

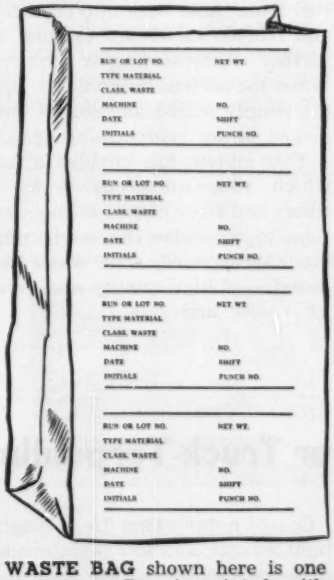
Collecting Waste in Paper Bags at the Machines Simplifies the Job for Thor Mills

STAFF PREPARED

EXCLUSIVE

IN THE tow-to-yarn manufacturing operation at Thor Mills Limited, Granby, Quebec, an effective waste control system has been adopted. Paper bags are hung on each machine for each type of waste made on each shift.

Using this method, regardless of the large variety of stock in process, waste is segregated by machine tenders as it is made; collection and tabulation of the over-all mill waste picture is a simple matter.



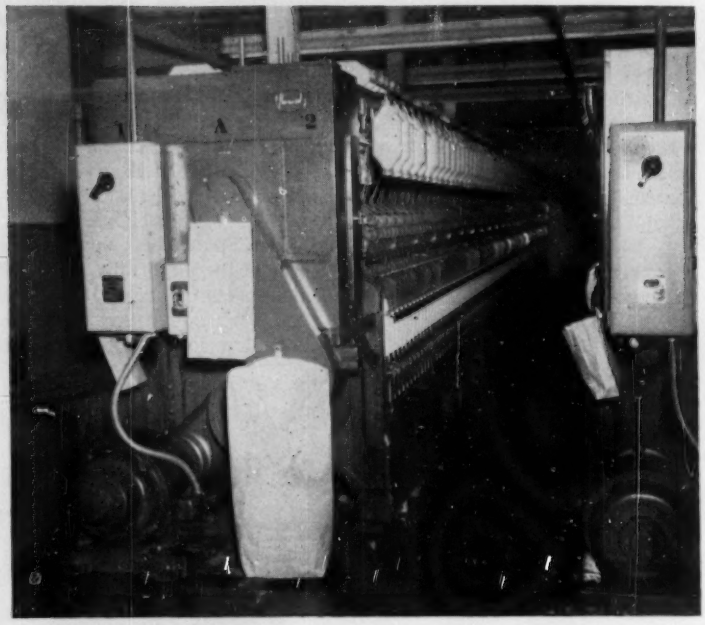
WASTE BAG shown here is one of 5 sizes. Bag is printed with multiple information forms so that it can be re-used either 4, 5, or 6 times, depending on the size of the bag and the number of printed forms.

BAG IS CLIPPED ON MACHINE, in this case a Pacific converter (left). Operator drops waste in appropriate bag as it is made. Waste is separated by production runs and is classified as tow, dirty soft waste, dirty thread, clean thread, and colored thread waste.

The Bags. There are five sizes of paper bags used (Nos. 5, 16, 25, 35, and 50). Large sizes are used for clean soft waste, medium size for dirty soft waste and clean thread waste, and small ones for dirty and colored thread waste. The bags are of the same type as are used by grocery stores.

Each bag is printed with 4, 5, or 6 small forms. On each shift, one form on a bag for each type of

WASTE CONTROL ROOM operator collects bags from central points in mill daily, weighs each, tabulates the amount, and sorts into proper carton.



SPINNING FRAME END holds bags for all three types of waste: clean soft (right), dirty thread (center), and colored thread (left).

waste at each station is filled in by machine operators to identify lot, material, class of waste, machine, and shift. The bag is re-used a number of times, depending on the number of forms it contains.

How Bags Are Used. The operators enter the mill for their shift and pick up the appropriate number and types of empty bags required for their machine stands. (Bags are kept in racks placed in each department.) The bags are then clipped on one side of their open ends and hung at some convenient place on each machine.

As waste is made or collected periodically from machines on the floor by operators, it is dropped into the correct bag. At the end of the shift, the operator removes all of the waste bags from her machine and takes them to one of several central points.

Collection. Thor Mills maintain a central waste control room which is run by one man working a 9-hour day. He collects all of the bags from three shifts from each central point daily, and takes them to the waste room.

Tabulation. Each bag is weighed on a 25-lb capacity scale which is accurate to one-tenth of a pound. As this is done, the waste man records the information by machine, shift, production run, and type of waste. The forms devised by Thor for this record are mimeographed and carry headings suitable for this particular plant.

Waste of the same fiber and classification is emptied into cardboard shipping containers after weighing, and the empty bags are returned to pigeon-holes for re-use. The used printed form on the bag is crossed out by the waste control operator at the time of weighing and recording.

A waste control record sheet is kept for each lot or run; it is submitted to the superintendent each morning. From this he may check the waste made throughout the mill by production run, machine, and shift for the preceding day. At the end of the production run these figures are totalled and submitted to the office for calculation of over-all waste statistics by shift and by department.

In the Thor set-up, since the waste is completely classified on the paper waste bags and is emptied from these bags into classified and labeled cardboard cartons, no further waste sorting is required. When the cartons become full, they are simply sealed and stored until picked up for reprocessing or sale.

This system has enabled a mill which runs numerous types of fibers and fiber blends at the same time to minimize the waste mixing. Consequently, the waste collected is of high quality and value for re-use and sale.

Coated Nylon Used For Truck Tarpaulins

SERVICE TESTS show conclusively that neoprene-coated nylon tarpaulins can save truckers as much as 50 per cent on their truck-cover expenses, a Du Pont Company representative reported recently.

Coated nylon's long life, strength, light weight, and low maintenance cost were cited as the principal factors contributing to major reductions in expense.

In over-the-road service tests, neoprene-coated nylon tarpaulins

have lasted four years under conditions where conventional materials last only two years, the spokesman said.

Pointing out that the material usually can be repaired quickly in the trucker's own shop, or even on the road, by use of a cementing process similar to that used to patch inner tubes, he said that this reduces downtime as well as labor costs. Moreover, repairs are much less frequent because coated nylon, despite its lighter weight, has approximately 35 per cent greater tensile strength and 300 per cent greater tear resistance.

Ease of handling, dimensional stability, waterproofness, resistance to rot and mildew, and resistance to attack from grease, oil, most chemicals, and sunlight, were intangible advantages cited for the neoprene-coated nylon tarpaulins.

Characteristics of Wash and Wear Cottons

BY ARNOLD L. LIPPERT
Joseph Bancroft & Sons Co.

ABSTRACT*

THE TERM "minimum care cottons" is, in my opinion, to be preferred to "wash and wear cottons," since in some cases the consumer may find it to his advantage to employ a light ironing treatment; and, more important, there are other factors which the consumer may not only desire but require in a product, which are really beyond the narrow definition of "wash and wear." [Definitions for several types of minimum care cottons have been suggested by the Bancroft Company; see TEXTILE INDUSTRIES for August, 1955, p. 61.—Eds.]

What Properties Are Desirable in Minimum Care Cottons? These properties may be divided into two general groups—one group relates to the geometry of the fabric system, the other group relates to the formulation applied, which changes the properties of the fabric system.

In the first group, of course, there are several things which are ordinarily taken for granted which are nevertheless important, such as tensile strength, tearing strength, abrasion resistance, cloth cover, weight, comfort, absorbency, color, etc.

The second group, depending upon the formulation applied, controls to some extent the dimensional stability, resistance to deformation, crease recovery, and ease of drying, but must not have too great a deleterious effect on the properties in the first group.

Crease Recovery. It is possible to produce by proper construction fabrics of improved crease recovery by emphasizing those factors which contribute to such a property. However, in most cases, the characteristics are still insufficient for standards of minimum care, or because of other factors—technical, decorative, and economical—it is not possible to construct fabrics emphasizing crease recovery alone. Nonetheless, our first principal conclusion would be that the consideration of the geometry of the fabric makes the attainment of a satisfactory end result much easier in some cases and possible for the first time in others.

It is possible and important to control fabric geometry after the fabric has been woven. For example, relaxation of a fabric increases the disorientation, thread count, crimp, and crease recovery. A plain print cloth fabric with an average crease recovery angle of 85° was processed to produce a formulated cotton under conditions of relaxation with an average angle of 135°. Under conditions of stress, the average angle is only 116°.

If the same formulated cotton with a recovery angle of 135° is compressed by heavy calendering during processing, the average

*From a paper presented at the Fourth Chemical Finishing Conference, sponsored by the National Cotton Council.

FIG. 1. Effect of fabric compression and relaxation on crease recovery and washing performance.

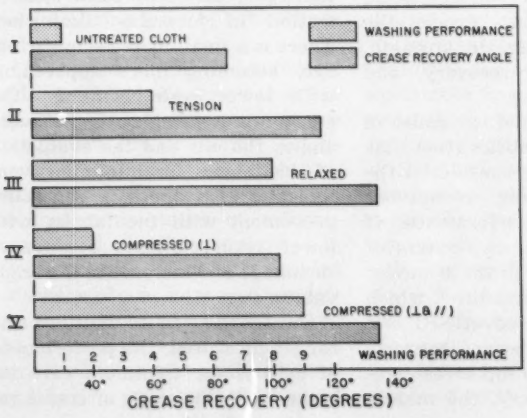
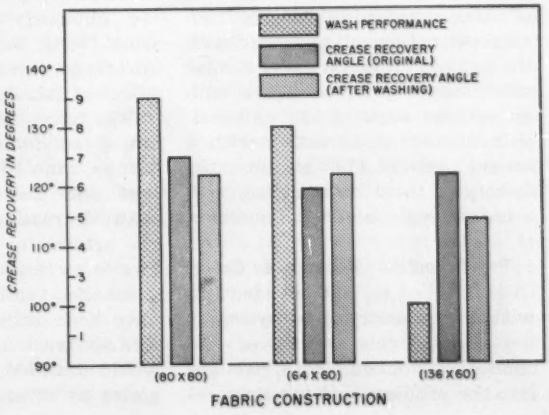


FIG. 2. Relationship of fabric construction to crease recovery and washing performance.



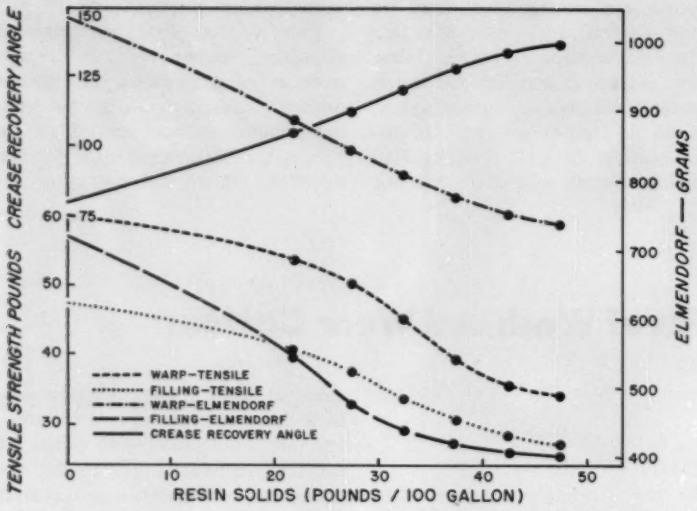


FIG. 3. Change in tensile strength, Elmendorf tear strength, and crease recovery angle with increasing resin concentration.

angle is 102°. But if it is compressed both perpendicular to and in the plane of the fabric at the same time, the average angle is again 135° **(Fig. 1).**

Both fabrics with crease recovery angles of 135° are excellent for minimum care cottons and would require no ironing. The other fabrics are quite unsatisfactory.

From this, we can draw the following at least preliminary conclusions: Compression perpendicular to the fabric plane decreases the crease recovery angle and the performance of the fabric in laundering for minimum care. Compression in the plane of the fabric increases the crease recovery angle and performance of the material.

Another illustration of the effect of geometry is the comparison of three appreciably different fabric constructions all processed with the same formulation under similar conditions **(Fig. 2).** One fabric with an average angle of 125° is excellent, another construction with a crease angle of 119° is also satisfactory, a third construction with a crease angle of 122° is inferior.

Psychological Effect of Color. Closely allied to, but not identical with, the geometry of the system is the psychological effect of the coloration applied. Thus, we get into the problem that the light reflectivity of certain shades differs; that it is usually greater with the depth of shade. With a broken print pattern or light shade, it is much more difficult to detect creases or unsatisfactory performance than it is with an unbroken surface or heavy shades. These effects are, of course, essentially psychological, but it must be recognized that the judicious use of print patterns and depth and type of plain shades can be utilized so as to improve the performance of the minimum care cottons.

Resistance to Laundering. The attainment of minimum care is possible by the application of proper formulation under conditions favorable to the optimum result, but first we must decide how we are going to measure our results. Although many defects exist, we obviously must expect the usual tests for tensile strength, shrinkage, crease recovery, and effect of laundering.

We have adopted a scale of rating laundered fabrics from nine to one, nine being considered the best and decreasing in number with decreasing performance. If one arbitrarily adopts a rating of five to correspond to the behavior of blended synthetic fabrics, which have been widely advertised and sold as "wash and wear," then we would consider the top three categories as satisfactory, the middle group as borderline or questionable, and the lower group as unsatisfactory. Exactly where the point of demarcation should be is difficult to determine; but, in any case, the comparison between the nine categories exists, and we are particularly interested in comparisons rather than absolute values.

Our conclusion: Minimum care cottons can be handled by home laundering and drying devices. Naturally, the material should not be run through a wringer or excessively twisted or creased.

Effect of Resin Concentration. The presence of any appreciable amount of condensation polymer, if properly placed in and on the fibers and yarns, improves some of the properties of cotton fabrics. We might naturally ask the questions—how much formulation do we need? What angle of crease recovery is required? and what is the relationship, if any, between angle of crease recovery to performance in laundering?

Taking one fabric system, which fabric in this case has been subjected to mechanical treatment and processed with a specific formulation of varying resin concentrations, we find as follows **(Fig. 3):** The loss in tensile and Elmendorf (tear) strength increases slowly with concentration. The value of the crease recovery angle rises sharply and then the rate of rise diminishes. The stability improves with concentration. Up to a point, the performance for minimum care improves with concentration.

After five launderings the difference in crease angles between fabrics of different resin concentration in formulas diminishes. There is a small increase in shrinkage, becoming more appreciable with lower resin contents. The curve representing crease recovery angles flattens and the evaluation of the fabrics for minimum wear indicates that there is some improvement with the fabrics with lower resin contents because of shrinkage and increase in the angle values.

Our conclusion is that, in the ranges measured, the performance of cottons for minimum care together with the angle of crease re-

covery increase rapidly, and a point of satisfactory performance may be selected with many fabric constructions where the disadvantages are still relatively unimportant. However, we must further qualify this conclusion by saying that the general resin type of formulation must be such as to give satisfactory performance to laundering under optimum conditions.

Should Minimum Care Cottons Be Water Repellent? There are two factors which are rather controversial. One is whether substantial water repellency should be part of the characteristics of minimum care cottons; and, if so, how much.

Formulated cottons which are resin treated possess characteristics of lower water absorption and, hence, require less time to dry to equilibrium conditions. This property persists through repeated launderings (**Fig. 4**). It is interesting to note that formulated cottons containing water repellent components behave very similarly to those not containing them. The exact value or need for such property varies with conditions to which the material is exposed. One of the great advantages of cotton fabrics, as compared to those fabrics made from some other fiber, is their comfort, which is closely related to the fiber—fabric moisture behavior. It is probable that, with the general level of formulation, these important relationships are not too unduly disturbed. However, it is my opinion that the water and vapor characteristics of some of the synthetic fibers cannot be too closely simulated in cottons without sacrificing some of cotton's advantages.

Undoubtedly, the reduction of water held and the decrease in the time required to dry a fabric are meritorious under many conditions of consumers' use. The conclusion to be drawn, if any, would be that achievement of satisfactory levels in performance in other respects with formulated cottons produces improved properties with respect to water held by the fabric after extraction and the length of time required to reach equilibrium conditions. We might

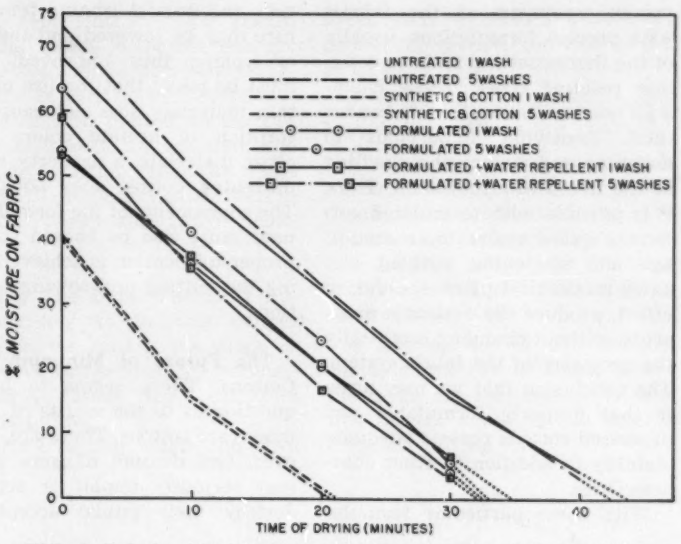

% MOISTURE ON FABRIC
TIME OF DRYING (MINUTES)
UNTREATED 1 WASH
UNTREATED 5 WASHES
SYNTHETIC & COTTON 1 WASH
SYNTHETIC & COTTON 5 WASHES
FORMULATED 1 WASH
FORMULATED 5 WASHES
FORMULATED +WATER REPELLENT 1 WASH
FORMULATED +WATER REPELLENT 5 WASHES

FIG. 4. Relationship between moisture content and time after extraction.

suggest another conclusion, that the use of water repellent components in the formulations contributes only to the water repellency of the fabric and does not essentially change the drying characteristics.

Chlorine Retention. Freedom from chlorine retention is important in some end uses, and an objective toward which to work. The complexity of the problem is well illustrated by the absence of a completely suitable test to evaluate results satisfactorily. By the AATCC tentative standard, different formulations vary in their resistance to chlorine retention. In comparing the formulated cottons, there seems to be no particular relationship between loss of strength from chlorine retention and other desirable properties.

The importance of chlorine retention is one on which no general agreement has been reached. The negligible number of complaints which my company in its own production and that of its licensees in hundreds of millions of yards have received is not only impressive but astounding.

We certainly should work toward the improvement of whatever limitations cotton may have. However, in the meantime, we should emphasize the tremendous assets of formulated cotton rather than a minor limitation. Our conception should be that we have created a new fiber with new properties, and it should be handled accordingly. In the same way that the commercial laundry and dry-cleaning industry has had to adapt its methods to the properties of fabrics made from various fibers, it should certainly be as easily argued that its methods should be likewise adapted to the properties of resin treated cottons.

Our conclusion would be that, with all other factors being equal, it is advisable to strive to obtain the lowest chlorine retention, but the sacrifice of other desirable properties to achieve better resistance to chlorine retention does not appear to be justified.

Dimensional Stability. Stability of fabric relates to its capability to retain its original dimension after laundering. Cotton fabrics lose their original shape because of the fact that cotton fibers swell on absorption of moisture. They tend to shorten longitudinally and expand in cross section. These facts result in the fabric having decreased area and a more compact structure. In other words, their cloth cover factor increases.

Two general methods have been developed to produce dimensional stability. One is the relaxed shrinkage method and the other in-

volves treatment of the fabrics with process formulations, usually of the thermosetting resin or cellulose reactive types. These chemicals react with the fibers to render them somewhat impervious to moisture and reduce the swelling of the fibers to a minimum. Thus, it is possible with formulated cottons to guard against both shrinkage and stretching without any extra mechanical processes and, in effect, produce the desirable properties without changing essentially the geometry of the fabric system. The conclusion that we may draw is that properly formulated and processed cottons possess adequate stability in addition to other characteristics.

With some particular formulation, the critical ironing temperature may be lowered and the ease of ironing thus improved. Care must be taken that the use of certain materials does not cause absorption of acetate colors from other materials, a property which untreated cotton does not have. The components of the formulation used must also be chosen so that proper lubrication is achieved during the cutting and sewing operations.

The Future of Minimum Care Cottons. There seems to be no question as to the merits of minimum care cottons. There are, however, two distinct dangers which may seriously impair or actually destroy their public acceptance. One is needlessly exaggerated claims of performance which will cause the consuming public to consider the minimum care cottons as only another purely advertising stunt.

The other danger is even more insidious. If under the stress and strain of economics and competition appreciable amounts of cotton fabrics are sold under this or similar designation, which for one or more collective reasons, such as unsuitable fabric, improper formulations, or incorrect processing, produce end products which are obviously unsatisfactory, we are asking for trouble. The consumers will be fooled once, maybe twice, but no more.

Wool Carding (Testing)

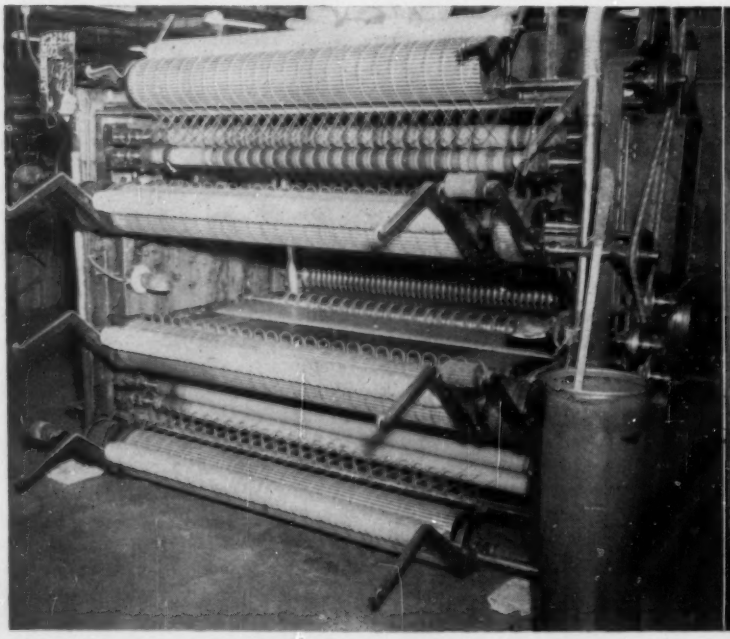
Reduce Bad Yarn by End-to-End Testing

STAFF PREPARED EXCLUSIVE

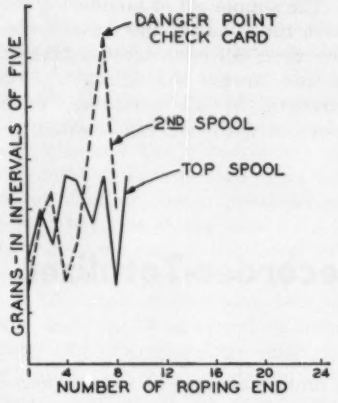
WHEN plant management at Strong, Hewat & Co., Inc., North Adams, Mass., considered the delivery of its nine card sets as containing 96 possibilities of defect sources each, a plan was devised to test all card delivery at the roping spools on a regular basis.

One bad end in a set of roping can spoil several pieces of goods; the bad end many times is invisible

HEADLESS SPOOLS are used for gathering samples of roping. Test includes all ends in the delivery.



EACH END from the test spool is removed individually and weighed in grains.



DATA ARE PLOTTED for the 4 spools on a graph. Percentage variation between high and low mean is calculated.

to routine checking by machine tenders; thus, a weight test is considered to be the most reliable.

This weight test is performed at regular intervals so that one card is checked each month. In cases where a particularly tough job is being run, the test is run weekly. The test takes 15 to 20 minutes to run.

Sampling. All roping spools are replaced with headless roping spools at the start of the test so that test material can be easily slipped from the end of the spool. The four spools are run until a fair sized sample builds up (about 10 minutes). To this point the test is run by the card tender. Standing by and taking over once the spools contain enough roping, is a young lady of the office staff who is trained to perform the end-to-end testing.

Weighing. The test spools are taken to a weighing station on the card room floor, and each end is slipped off of the spool individually and weighed in grains. If the weight of any one end is too much or too little in comparison with the weights of other ends from the same spool, the condition is immediately reported to the overseer, a correction is made on the card, and another test is taken immediately.

Assembling The Data. All weights are plotted on a chart. The X-axis represents weight in grains, and the Y-axis is for the number of the end. These numbers represent the 24 ends on each spool.

One curve is plotted for each of the four spools. In addition, the over-all variation from the mean high to the mean low of all ends in the test is calculated as a percentage.

Using The Data. The most important key to locating danger areas on the card is the shape of the curve rather than the percentage of variation. Some examples of this follow:

1. An irregular single end on a spool often indicates a worn tape, dirt in the groove, and tape round at edges.

2. If an entire test run seems low, doffer settings are checked.

3. A low reading for several ends has been traced back as far as the broad band feed between the breaker and intermediate cards. This occurs when the carriage traverse is off and lays down a thinner web.

4. Any number of high and low combinations can be found where the cards are set improperly. For this reason, a test is run after a complete setting job.

Prevention of Chlorine Retention in Resin Treated Fabrics

BY JOHN H. HOWARD
Cranston Print Works

ABSTRACT*

A STUDY has been made of the effect of chlorine on the tensile strength, tear strength, and crease resistance of mercerized, 80 x 80, 39", 4.00-yd, white, cotton cloth treated with three types of thermosetting resins — urea-formaldehyde, melamine - formaldehyde, and imidazolidone-formaldehyde.

Method. The resin mixes consisted only of an organic catalyst and the resin. The concentration of the catalyst was 11 pounds per 100 gallons in each case. The concentration (dry basis) of the urea-formaldehyde resin was 50 lb/100 gallons; that of the melamine-formaldehyde resin was 80 lb/100 gallons; and that of the imidazolidone-formaldehyde resin was 50 lb/100 gallons. The volume of each resin mix was adjusted so as to conform to a pick-up of 60%.

The samples were given a single dip and nip twice on a laboratory padder, dried on a steam-heated can, and cured for two minutes at 350 F in a mechanical convection oven.

After conditioning, samples were tested for tensile strength, tear strength, and wrinkle resistance.

Patches of each resin treatment, along with untreated controls, were tested for chlorine retention by AATCC Tentative Test 69-52. Chlorinated samples were then treated with 0.50% sodium bisulfite solution in the same manner that the chlorine was applied in the AATCC test.

Various tests were then made on all samples.

Conclusions. Sodium bisulfite may be utilized to remove chlorine retained by thermosetting resin treated cotton fabrics. However, losses in warp and filling wrinkle recovery do occur, the least loss being incurred by those fabrics treated with the imidazolidone-formaldehyde type of resin.

Chlorine - bisulfite treatment causes a loss in the filling tearing strength of fabrics treated with urea-formaldehyde and imidazolidone-formaldehyde type resins while increasing the filling tearing strength where melamine-formaldehyde resins are employed.

Retained chlorine causes a loss in wrinkle recovery of fabrics treated with any of the thermoset-

*From a paper presented at the Fourth Chemical Finishing Conference, sponsored by the National Cotton Council.

ting resins. All such finishes smell of chlorine when treated with chlorine, despite the amount of chlorine retention. This indicates that fabric must be absolutely non-chlorine retentive if the odor problem is to be overcome.

Chlorine treatment alone causes a loss in the filling tearing strength of urea-formaldehyde and melamine-formaldehyde treated fabrics.

The simple act of laundering the first time lowers the wrinkle recovery of all resin treated fabrics. It also lowers the filling tearing strength in all instances, even more so with nonresin treated.

Machine Downtime Analyzed By Time Recorder-Totalizer

STAFF PREPARED
EXCLUSIVE

CONSTANT OBSERVATION of all goods in process would be the ideal way for supervisors charged with maintaining a high production record to be sure that equipment and personnel operate at reasonable levels of efficiency. Since this is not possible, other means are usually employed: periodic tours of entire departments, production record checks, and scheduled studies such as loom-stop checks.

The effect of diversification in many mills very often is that supervisory personnel have only a limited amount of time to make these checks as often as they would like. In small mills, the situation is further complicated by the impracticability of maintaining production control departments equipped to make time studies and production tests. One such mill, Pansy Weaving Mills Inc., Pawtucket, R. I., has relieved some of the difficulty connected with keeping a constant vigil on the production floor by its use of a recording device.

The unit, installed for two-week periods on various looms and permanently installed on slasher and quillers, does two things: It records the time and duration of each machine stop in chronological order on a tape, and it records total operating time on a nonreset clock.

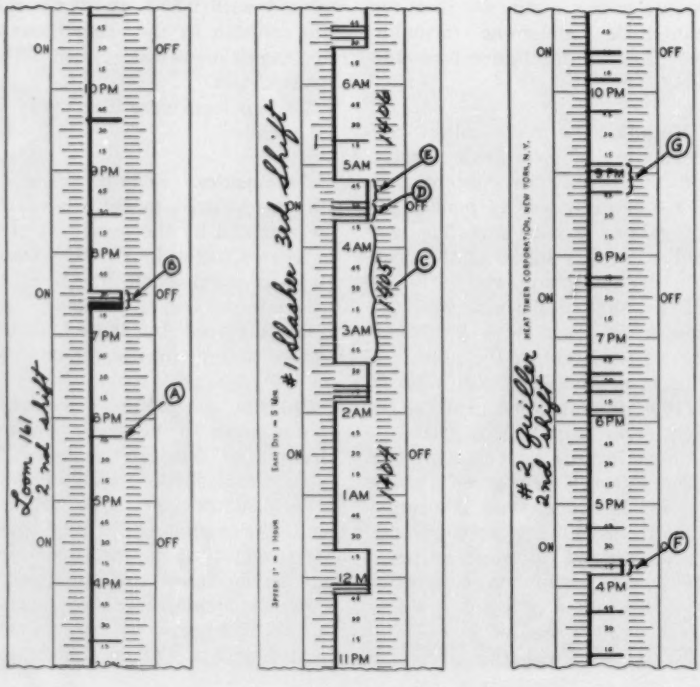
Eight months of experience in using the recording devices have allowed the 320-loom synthetic mill to do several things:

1. Pick up mechanical or human sources of low production soon after they occur. Previously they could detect and correct them only by random reporting or weekly examination of production records. The tapes are checked by foremen whenever they have a chance, but the information is always there; tapes are torn off the recorders each shift and submitted to the office for study.

2. The shift-to-shift analysis of stops performs a psychological "watchdog" function, warning operating personnel against excessive absence from machines, coming late, and buck-passing low production record responsibility to another shift.

3. By reading total machine time "on" directly from the recorder, periodic efficiency ratings are

TAPES FOR ONE SHIFT each of weaving (left), slashing (center), and quilling (right) show characteristic patterns. Line up left side of tape indicates machine was on, and up right side that it was stopped. Horizontal line indicates either a start or a stop; if machine was started soon after it stopped or vice versa, there will be only one horizontal line to indicate both. Arrow (A), illustrates this, is a short loom stop, probably an end out. Arrow (B) indicates many stops in a short period of time; this usually means that a fixer has been working on the loom. Arrows (C), (D), and (E) point to one slashing cycle for warp No. 1405, which can be read from the tape to have totaled 2 hours and 15 minutes. (C) indicates filling the beam, (D) shows the insertion of four leases, and (E) jogging and doffing. (F) indicates that the quiller made two stops which were unattended for about five minutes each; the regular pattern shown at arrow (G) indicates that the same spindle knocked the machine off four times (machine cycle about five minutes).

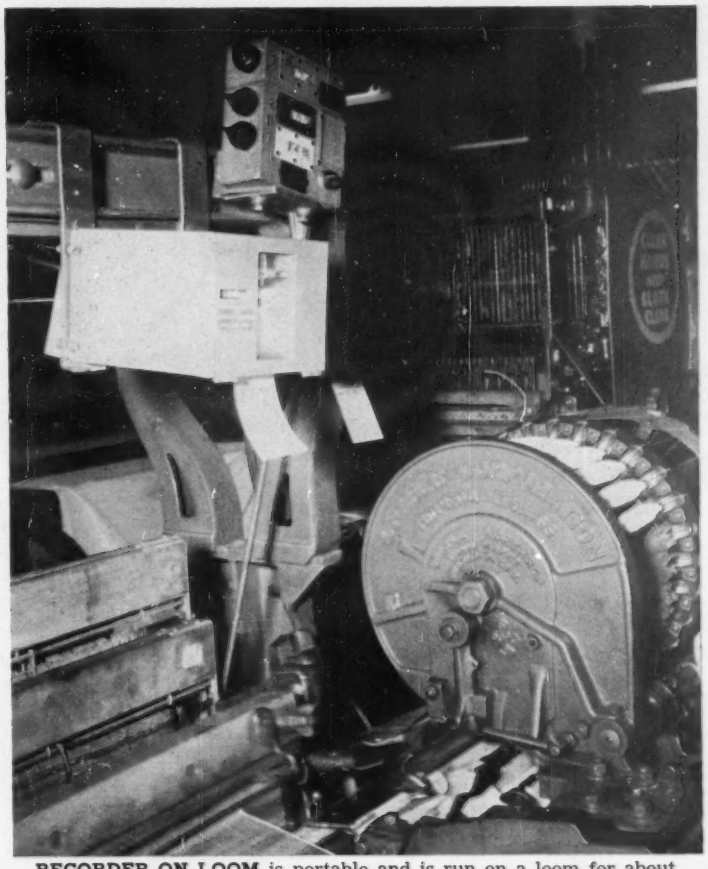


measured.

4. When a new mill run is made, such as trying a new size formula, a different shuttle eye, or a new style in the looms, the stop record is compared to that of some standard run and the effectiveness of the new run is evaluated. This has never before been possible at Pansy because of the time it took to have operating personnel or supervisors do the job.

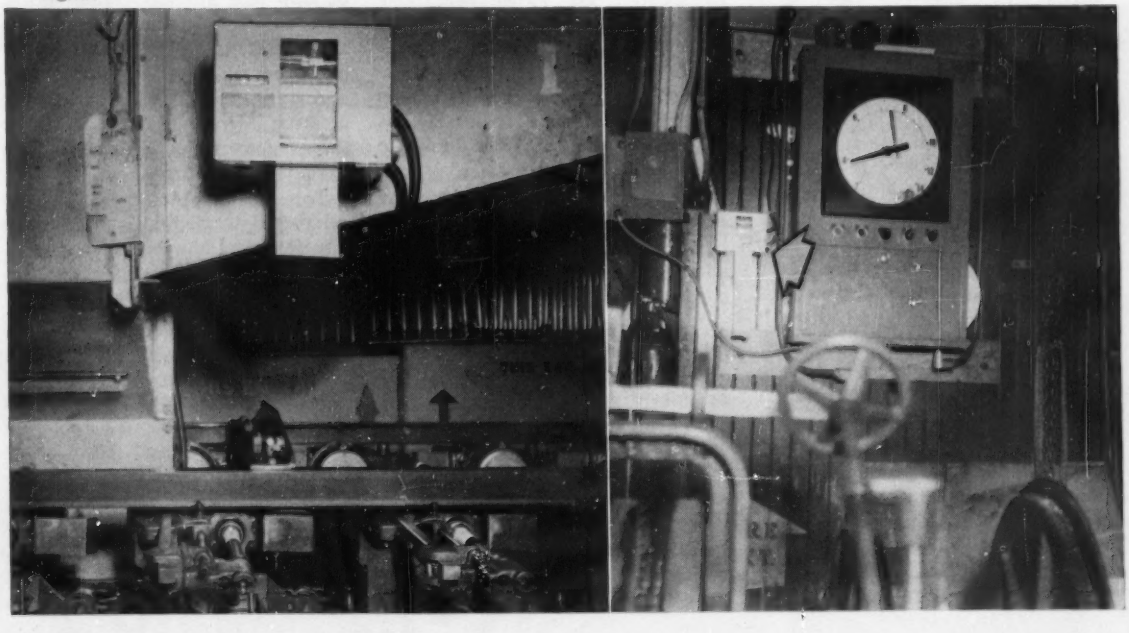
5. To establish standard data on the basis of long-term observations. In an operation such as slashing, which consists of elements performed in sequence—creeling, slashing, leasing, and doffing—the mill will, upon collection of sufficient data, be in a position to establish min-max limits for each element. It will also be better able to establish loom loads for weavers by knowing more about performance of standard qualities.

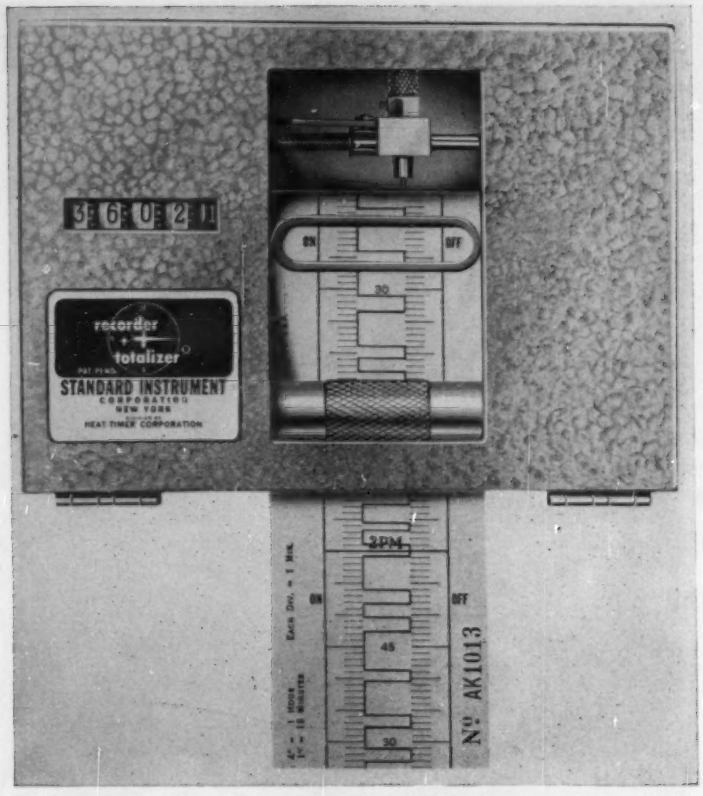
Weave Room. While the tape does not indicate the cause of the stop, the mill feels that it gets almost the same results with the recorder as it does with a four- or eight-hour loom check made by a time study man. Two mobile units are maintained and placed on looms usually for two-week peri-



RECORDER ON LOOM is portable and is run on a loom for about two weeks to check out new and/or troublesome styles. Recorder is activated through Micro Switch attached to shipper.

PERMANENTLY PLACED RECORDERS are shown on quiller (left), and on wall behind front end of slasher (right).





CLOSE-UP OF TIME RECORDER+TOTALIZER. Time totalizer continuously computes and registers total operations time (3602 at upper left). Time and duration of machine stops are recorded on the tape.

ods; troublesome weaving styles, new styles, and representative loom runs of standard styles are given the two-week checks.

When the loom is running, the recorder stylus traces a line to the left of the tape; when stopped the line is at the right, and when starting or stopping a horizontal line is traced from one side to the other. The time is marked in a graduated scale; one inch equals one hour on the tape.

By such use, the mill has been able to tell how long it takes a loom fixer to arrive at a stopped loom; and the fact that a fixer is at a loom is detectable by the frequent starts recorded on the tape in a short time, since loom fixers generally start a loom several times while it is being fixed. Another use is to get an over-all picture so that if a loom is stopping too much, something can be done about it.

Statistically, total loom stops for each style, by shift, are recorded in the mill office. Each tape is marked on its edge with loom number, date, and shift.

Slashing. Important to costing and tracing back a quality problem on the cotton system of slashing is a record of the number and location of yarn breaks. It has always been a practice at Pansy for the machine operator to keep a running record of this, classifying the breaks as selvage, body, section beam, or slasher breaks. This is still done, but installation of a recorder provides a double check.

As mentioned, standard times for each element are being arrived at through long-term study, and if an incentive system is installed, these figures may be used. Generally, the recorders in this department have been used to locate and cut down instances of excessive downtime.

Warp numbers, machine numbers, and date are written in on tape edges to identify them. The pattern of the marked tape can be analyzed by tracing characteristic markings to a specific element (see accompanying illustration).

Quilling. Recorders are installed on Abbott quillers. A principal use on this machine is to locate sources of mechanical difficulty. It takes about five minutes for a spindle to make a complete cycle

Mill Men Discuss

STAFF REPORT

MILL MEN from Alabama and surrounding states in attendance at the fall meeting of the Alabama Textile Operating Executives at Thach Auditorium, Auburn, Ala., participated in a discussion of problems of mill service departments, based on the answers supplied by 13 mills representing nearly 700,000 spindles to questions submitted before the meeting.

A discussion of mechanical and electrical problems was led by Bruce Gray, master mechanic of the Langdale Mill of West Point Manufacturing Co., Langdale, Ala.; and Lester Sayers, superintendent of Opp and Micolas Cotton Mills, Opp, Ala., was chairman for the session on maintenance and supply problems.

At an election held after the meeting, Mr. Sayers was chosen to fill a vacancy on the association's executive committee.

The answers to the questions submitted to the mills before the meeting, and the open-forum discussions, are digested on the following pages for easy reading.

Maintenance

Maintenance Records. Judging from replies to a question on methods of keeping records of labor and material costs on production equipment, most Alabama mills have a system for apportioning costs to the various departments according to the amount used. The actual record is a job

of the machine. If the tape shows a stop every five minutes, mechanical difficulty with that spindle is indicated, while an operator has a difficult time telling if the same spindle is stopping the machine all of the time.

Another use on the quiller is to emphasize the importance of machine cleaning. The number of stops before and after cleaning show enough of a difference to impress the most skeptical of observers.

Installation. The recorder referred to in this report is known as the Time Recorder + Totalizer, manufactured by the Standard Instrument Corp. Division of Heat-Timer Corp. The units are activated either by a load sensing device or by the start-stop activity of the machine through its clutch to guide the path of the stylus; a 250-foot roll of recording tape is loaded in the unit and it moves continuously through the recorder at a fixed speed.

In the loom installation, the on-off path of the stylus is activated through a Micro Switch attached to the shipper motion.

Humidifier Maintenance And Other Service Problems

card or work sheet on which the materials, labor, and other pertinent data are entered. In some cases the time required for each job is recorded by punch clock.

Mill A, a large mill manufacturing industrial fabrics, gave this reply to the question:

"Our maintenance supplies, or machine replacement parts, are charged to the various departments when received, and are kept in a storeroom apart from the general supply room [this mill has two supply rooms—one for general supplies and one for maintenance supplies].

"The supply cost is recorded and given to the department overseers weekly. The labor cost is charged to the departments in which work is being done.

"We do not keep individual machine records, although we do use an overhauler's check card on which replacement parts are listed and the total number of parts used on a given group of machines is tabulated at the end of each month. This is done for the purpose of determining whether improved parts would be practical.

"We do not separate routine labor costs from labor used in installing new equipment except on large installations. On these jobs we designate the project by number, and both labor and material are charged out by this number."

Humidifier Maintenance. Daily inspection of the humidification system is the rule at most of the mills participating in the discussion. *Mill A* cleans nozzles every 24 hours. Heads are overhauled and used as replacements. This mill has screen filters on the gravity feed system to keep the water clean, and the reserve boxes are cleaned out every six months. The high-pressure system has a filter with a replaceable medium which is changed every two years. Branch lines are flushed monthly.

At *Mill C* the whole humidification system is inspected daily. All air lines are blown and cleaned the first thing every morning. Loose lint is cleaned from the controls, and all heads not working are replaced daily. Controls are given a weekly check, using a sling psychrometer.

All heads are completely disassembled every six months at *Mill E*, and are cleaned and necessary repairs made.

Mill G has one humidifier man on the first shift in each department, who cleans and repairs atomizers. One man repairs all controls and is responsible for maintaining correct humidity throughout the mill. Where air ducts are involved, cleaning is done on week ends. Secondhands are allowed to have keys to the controls.

The method used by *Mill L* to clean its central station system is to use hand scrapers and stiff wire brushes to remove rust and loose and scaling paint. The surfaces are then coated with "Wedac" solvent and paint is applied over this surface. Several different makes of oil-base paint have been tried, but none has as yet proved satisfactory.

Opinion is divided on the use of additives in the water supply for the humidification system; about one-third of the mills represented use them. *Mill L* uses an additive to keep the water on the alkaline side, at a pH of 8.5 to 9.0. *Mill M* uses a sodium metaphosphate-type sequestering agent.

Supply Department

Requisitions to Supply Room. Mills naming the personnel who are authorized to make requisitions to the supply room listed the following:

Mill A—Overseers, secondhands, and supply carriers.

Mill B—Secondhands, head loom fixer.

Mill D—Overseers, secondhands, chief fixer.

Mill E—Overseers, assistant overseers, secondhands.

Mill F—Overseers, assistant overseers.

Mill G—Overseers, weave room section men (secondhand must approve requisitions for temples and shuttles).

Mill H—Overseers and secondhands.

Mill I—Overseers and assistant overseers.

Mill J—Overseers and secondhands.

Mill K—Overseers and secondhands.

Mill L—Overseers for items not carried in supply room, secondhands for stock items.

Mill M—Overseers and secondhands in about 75% of the

Form 512-A

JOB CARD

NAME Orvel C. Griffith DATE 9-30 SHIFT 1ST

DEPT.	MACH. NO.	JOB NO.	REPAIRS	PARTS USED		Elapsed TIME	TIME
Spin. #2.	152	1	Blower fuse blown, 2 brushes out	1-6A fuse 2 brushes	Out		6.0 FR
					In		6.8 FR
Weave #1	1090	2	Stop motion switch Torn up. replaced	1-Used Switch	Out		6.9 FR
					In		7.4 FR
Spinning #2&3		3	Made weekly inspection of Mono. rail Cleaners	1-guide bearing	Out		7.5 FR
					In		9.5 FR
Carding #30		4	Made weekly inspection of Mono-rail Cleaner	2 brushes	Out		9.5 FR
					In		10.2 FR
Fill. Spin	19	5	Relay Tripped-fuse burned bad bearing on Pneumafil	1-6A fuse 1-Ball bearing	Out		10.2 FR
					In		11.2 FR
Fill. Spin	3	6	Humidifier burned up Took Humidifier down		Out		11.4 FR
					In		11.9 FR
Slashing		7	Hoist beam hung on frame. repaired		Out		11.9 FR
					In		12.5 FR
Slashing	9	8	Size pump motor grounded took down + repaired		Out		12.5 FR
					In		13.1 FR
Weave #1	1090	9	Stop motion Switch bad - replaced	1-Switch	Out		13.1 FR
					In		13.5 FR
Weave #2	1090	10	Stop motion bar grounded Cleared		Out		13.6 FR
					In		13.9 FR
					Out		
					In		
					Out		
					In		
					Out		
					In		
					Out		
					In		
					Out		
					In		

JOB CARD for electrical maintenance was designed by *Mill A*. Column at right is punched by Simplex job time clock in tenths of an hour, for easy computing of time spent on each job.

departments, "almost anyone" in the other 25%.

Worn and Broken Parts. Most of the mills require that worn and broken parts be turned in to the supply room when new parts are requisitioned, but some have other methods of handling.

Some of the mills have scrap boxes for these parts; the parts are examined at regular intervals by the department overseer or by some other supervisor, who decides which are to be repaired and which are to be discarded as scrap.

Inventory Practices. All of the mills reporting make a physical inventory of supplies at least once a year. Several take inventory twice a year, and one makes a quarterly inventory.

Some mills make spot checks between inventory periods. One mill makes a continuous inventory, by checking a certain number of bins daily.

Mills vary fairly widely in the number of times a year in which they have a turnover of inventory, the range for all items is twice a year to six times. On some frequently used parts the turnover will be once or twice a month, and on others it may be several years. The average for all items among the mills reporting was three to four times a year.

Three mills gave their inventory value:

1. $3 per spindle, or $140 per loom (type of mill not specified).
2. $1 to $1.50 per spindle (print cloth mill), which this mill considers average for its type operation.
3. $3 per spindle, or $150 per loom (duck).

Mechanical Department

Salvage of Loom Parts. All of the reporting mills salvage loom parts which can be welded satisfactorily, and where the cost of welding is less than that of a new part. Examples of parts which are welded are brackets, braces, handles, box fronts, friction clutch levers, friction disk gear guards, filling feelers, cloth roll stands, treadles, lay guards, and loom sides.

Welded parts are usually returned to the supply room for reissue. At one mill, all parts are inspected once a week by the weave room overseer and secondhand, and a decision made as to which to weld and which to discard.

An example of a part which is not welded is the link lever on the take-up motion; replacement cost is less than that of welding.

A majority of the mills prefer electric welding rather than metallizing for small jobs, principally because of the time required to set up metallizing equipment. However, some mills have metallizing equipment set up at all times, and use whichever appears best for a particular job. Metallizing is usually preferred where heat would warp journals or shafts.

The commonest parts now being metallized include card and garnett feed rolls, loom take-up rolls motor shafts, journals, crankshafts, camshafts, roll necks, card doffer shafts, and beater shafts.

One mill weaving several types of heavy fabrics metallizes all of its sand rolls. The fineness or coarseness of the metallizing is dependent on the type goods being woven. The rolls are metallized with two coats of No. 2 stainless steel, to prevent rust spots. Cost is about $3 per roll, for materials and labor.

It was the consensus of the mill

men that metallizing is least desirable where there are keyways or threads.

Oilite Bearings. All of the mills who had used Oilite bearings reported favorably on their use, where pressures are not high. Points of use include card cylinder and licker-in bearings, loom rocker shaft bearings, card feed rolls, card doffers, certain opener and picker bearings, foot-end outrigger cylinder shaft on the spinning frame, and loom cam followers, sand rollers, and large and small disk holders on the battery.

Electrical Department

Electrical Maintenance Records. *Mill A* uses a Simplex job time clock with a card designed by the mill for its own use (see accompanying illustration). The card shows the department, machine number, job number, repairs, parts used, and time started and completed. Each man uses as many of these cards as required.

The information on these cards provides a daily check on the maintenance men and also on the maintenance trouble in the plant. The cards are filed, and any complaint on maintenance of electrical equipment can be quickly checked back to the man who did the work.

Some mills report using a Kardex system for records of electrical maintenance [a complete description of how Cone Mills Corp., Greensboro, N. C., uses this system was given in TEXTILE INDUSTRIES for June, 1955, pp. 158-160].

Electrical Load When Starting Up. Several mills plan startups after a shutdown to avoid excessive electrical loads. At one mill the card room starts up five minutes before the hour (one man starts all the motors), the spinning room starts up on the hour (section men start motors), and the winding department starts up five minutes after the hour.

Another mill starts all 25-hp and larger motors first, one at a time, then starts smaller motors by lines. Several mills use capacitors.

Mills having trouble from shortened electric lamp life because of high voltage during low demand periods were advised to install voltage regulators, if they are not already installed at their primary substation. If power factor correcting capacitors are taken off the line during shutdowns, there will be less chance of high voltages.

Reducing Load Peaks. *Mill K* reported, "We have run power factor tests and demand tests. We have a recording power factor meter and a demand meter, so that we can always see what both our demand and power factor are. From observation of these meters it is easy to tell when our demand is the highest. We also find our power factor meter helpful in determining when to turn our capacitors on and off.

"During our peak we try to get as many of our larger motors off the line as we can without curtailing production. One way we do this is to arrange our blow-off schedule in the different departments so that we can cut off some of the large air compressor motors during our peak demand period."

Two Recessions Seen by 1965

SOME RUTS in the road up hill, two minor recessions in the next ten years for America's expanding economy, were spotted by the Research Institute of America as it released its analysis of trends and projections for the economy of 1965.

Leo Cherne, executive director, announced that the Research Institute does not believe the economy will grow so fast as predicted by the Staff of the Joint Congressional Committee on the Economic Report. Yet, he added:

"We are convinced that growth will be substantial and no major depression is in sight."

Among the key predictions were:

(1) Unemployment probably will increase by at least one million in the next three years as a result of unabsorbed additions to the work force.

(2) Prices will rise at least 10 to 16 per cent in the next ten years.

(3) The industrial map of the U. S. will change more drastically between '55 and '65 than in any previous period.

On the basis of an extensive and continuing study of business conditions and prospects, the Research Institute concluded that consumer spending will increase rapidly in the next ten years—but not rapidly enough to bring about the growth projected in the reports of the Congressional Staff and some private economists.

The Institute took issue with some of the assumptions underlying the more widely publicized projections. For instance, it noted, the congressional report's anticipation of a 47 per cent increase in gross national output depends on skyrocketing consumer spending and a dip in savings. Actually, rising incomes may well bring a rise in savings, according to this economic analysis. Also questioned was the assumption that the government can spend a great deal more than it is spending now and still lower taxes.

"Business will play a major role in how fast consumer spending rises," Mr. Cherne stressed. "Industry faces a tremendous challenge in the next decade in developing new products and new selling techniques that will win more of the consumers' dollars."

Citing weaknesses in a few key business areas, the Institute reported that the first of the minor recessions is likely to come within the next two years, when the present optimism runs into some hard economic facts. Among them: Odds are that housing construction (estimated at 1.3 million units this year) will do well to average more than 1 million units a year for the next several years.

Population increases, a major factor in expanding the market, will have a greater impact after 1960 when the post-war baby crop starts to come of age than in the next five years, in the Institute's

opinion. Current population gains are greater for the young and the old than for the medium age groups which spend the most.

Here are some of the forecasts for business:

(1) Supermarkets will dominate in the expansion of retail trade and move much further into non-food lines.

(2) Atomic energy development will create large export markets for nuclear power plants, instruments, research reactors, and for parts and components.

(3) Although fully automatic factories are not around the corner, "islands of automation" will be commonplace in a wide variety of industries.

Down-swings of the economy are likely to be relatively few, quite short-lived, and moderate, Mr. Cherne said, because of government action, either direct or indirect, but always in an inflationary direction.

Weather Resistance Improved By Acetylating Vat Dyed Cotton

BY W. N. BERARD, S. G. GREMILLION, JR., AND C. F. GOLDTHWAIT
Southern Regional Research Laboratory

ABSTRACT*

A NEW PRCEDURE being developed at the Southern Regional Research Laboratory promises to make suitably treated cotton last two or three times its usual life on exposure to weather. Cotton is, and has long been, the principal textile fiber used in "outdoor" fabrics. Its principal weakness in this field, susceptibility to microbiological and photochemical degradation, is generally recognized, and much effort has been devoted to overcoming it. It has been estimated that annual loss due to deterioration of all types of textiles by microorganisms is about $75 million, and most of these textiles are cotton.

*From a paper presented at the Fourth Chemical Finishing Conference, sponsored by the National Cotton Council.

Improved Process. In order to obtain some improvement in outdoor fabrics it seemed desirable to add the resistance to rotting imparted by acetylation to the light fastness of vat dyes. Application of the vat dyes by standard procedures to partially acetylated cotton is not considered desirable because it is usually accompanied by a de-acetylation from the alkalinity of the dye bath. This saponification of the partial cellulose acetate to even a small degree has been found to detract greatly from its resistance to rotting. Since there would be an element of uncertainty at best, a more practical approach was to dye the cotton *(Continued bottom of page 121)*

FIG. 1. Retention of strength during weather exposure, Olive Drab No. 7 shade on sheeting, acetylated, and exposed for six months at New Orleans, La.

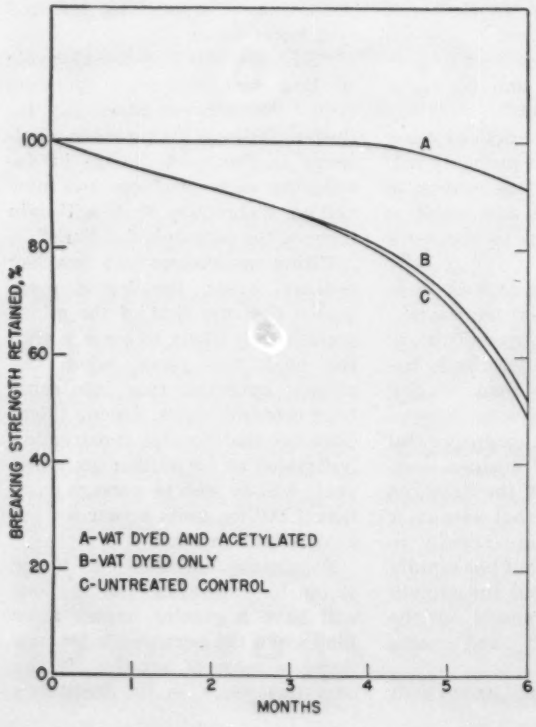
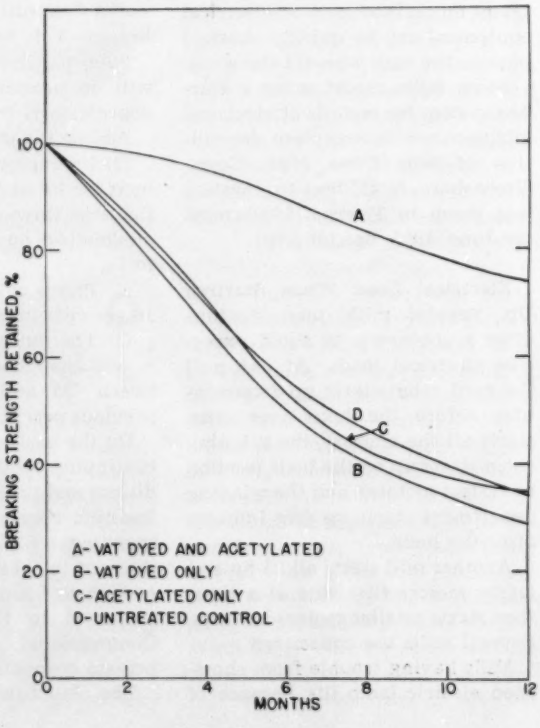
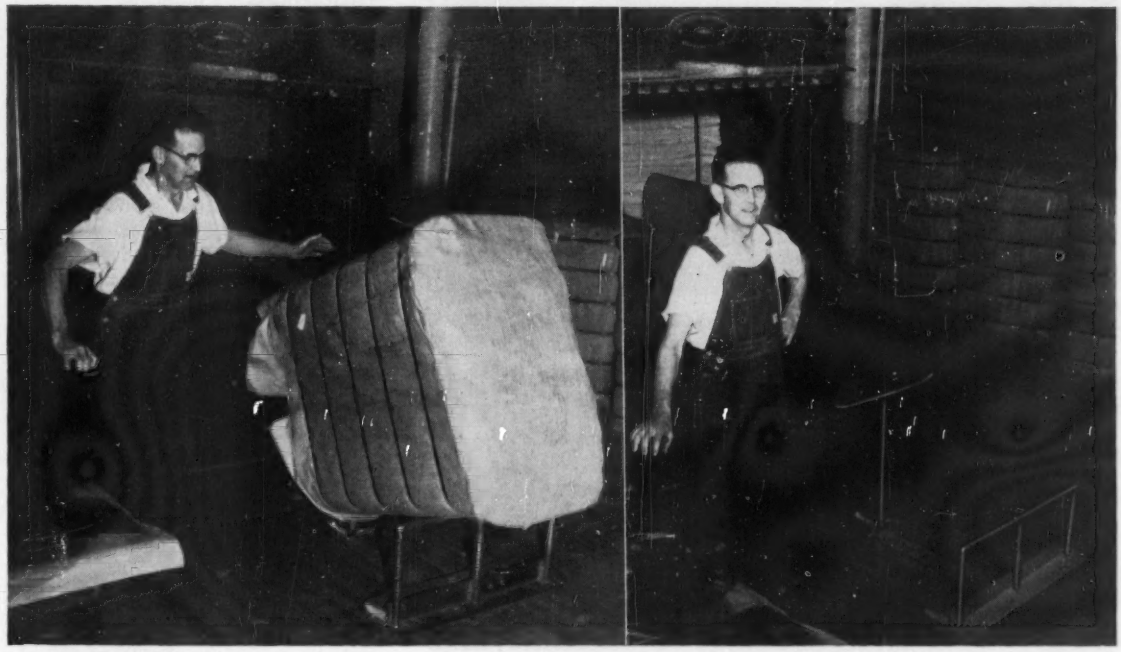


FIG. 2. Retention of strength during weather exposure, Olive Drab No. 7 shade on sheeting, acetylated, and exposed one year at New Orleans, La



Air Lift Eases Cloth Baling Chore



STAFF PREPARED
EXCLUSIVE

A MILL-MADE air lift bale turner is recessed in the floor near the cloth baler and is actuated by an air cylinder mounted in a barrel of concrete under the floor. This device relieves the operator of the bale turning chore.

The mechanism is controlled by a manually operated valve as shown in the accompanying illustration.

(Continued from page 120)

first and then follow by acetylation. The result was much more than a mere additive effect.

Method. Cotton fabric is first dyed by the usual vat dyeing methods with selected vat dyestuffs which are fast to light. It is then acetylated to about 18 per cent acetyl content by standard procedures [see TEXTILE INDUSTRIES for January, 1952, pp. 97-102, 194-195]. Basic, direct, sulfur, and naphthol dyes have also been tried, but without any promising results.

Results. The strength retentions of acetylated vat dyed, vat dyed only, and untreated sheetings during 6 months of exposure to weather are shown in Figure 1. This dyeing was olive drab No. 7 made from a combination of Vat Khaki 2G (Pr. 122), Vat Brown R, (C.I. 1151), and Vat Direct Black RB (Pr. 289). After six months the acetylated vat dyed sample showed the very high strength retention of approximately 90 per cent; but the untreated cotton and the dyed sample behaved about alike and showed only 50 per cent. From these limited results it was apparent that the combination treatment had imparted unusually high weather resistance.

The results of the first full year of weather exposure are shown in Figure 2, for sheeting colored with the same dye combination as before. Again, after 6 months of exposure, the acetylated vat dyed sample had about 90% strength retention, while the untreated control sample vat dyed only, and cloth acetylated only, had each retained about 50% of their original breaking strengths. At the end of 12 months the acetylated vat dyed fabric still retained about 75% strength while the others were down to 30-35%.

Percentages of acetyl for most effective protection are being determined. The preliminary indications are that protection improves with acetyl content. However, no limits have been determined and it may be quite possible that different percentages may be most favorable for different dyestuffs.

If it is assumed that the time required to reach 50% retention of strength represents the service life of cotton goods, a life of three times normal is indicated for some of the items tested. The samples dyed but not acetylated have reached about 50% in 4 months, while those dyed and acetylated required 12 months to reach similar values.

FLYING SHUTTLE LOOM has been adopted by the Bureau of Handicrafts and Small Industries of Quebec as one of the answers to handicraft progress.

Canadian Handicraft Textiles Is an Important Industry

STAFF PREPARED
EXCLUSIVE

THE CANADIAN market for textiles is relatively small, and as a result variety rather than long runs of any one style is dominant. Because of this, a place has been established in that country's industrial group for a manual art: hand weaving.

This handicraft is characterized by short warps and short length weaving on an individualized custom basis; it can be compared to novelty power weaving as a painting is compared to a photograph.

The structure of the industry is as complex and varied as the end product itself, but its over-all size is unmistakable. In the Province of Quebec alone, there are in operation over 50,000 hand looms.

The Weavers. This group is made up of several classes of craftsmen: skilled full-time professionals and their employees, skilled part-time amateurs, individuals engaged in vocational therapy, Indians and Eskimos, "do-it-yourself" hobbyists, and women's club members.

From the organizational standpoint there seem to be at least three different types of operations: the small mill which operates as all other mills do, the one-man business, and the co-operative which purchases raw material and markets for a group of individual weavers.

The Looms. For the most part the standard hand loom used in Canada is a four-harness treadle machine, with a treadle for let-off and hand operated take-up. The shuttle is operated entirely by hand; there are no boxes.

Since World War II, a number of flying shuttle looms have been brought into Quebec. These looms vary from six to twelve harnesses, most used is an eight-harness loom.

The Agencies. There are several groups devoted to guiding Canadian textile handicrafters. The Federal government through the activities of three of its agencies advises on procurement of raw materials and on export marketing, and arranges for surveys, exhibits, displays, and tourist publicity.

At the provincial government level, Quebec, Nova Scotia, New Brunswick, and British Columbia actively participate in assisting the commercial production of handicraft textiles. In Quebec the provincial agency—The Bureau of Handicrafts and Small Industries—makes raw materials and supplies available to weavers at wholesale prices, lends technical and commercial assistance, acts as a clearing house for production, and promotes the industry as a whole. The Quebec agency is concerned primarily with full-time, rather than recreational sources of supply.

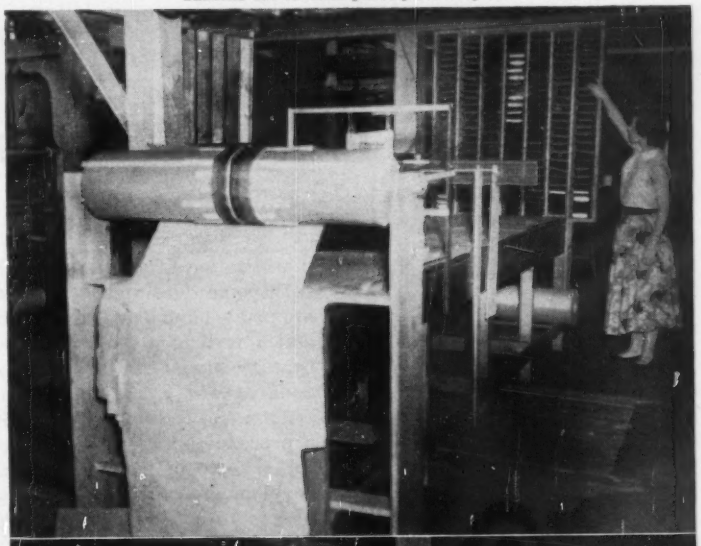
Nova Scotia's Handcrafts Division offers the service of a designer, arranges financing for the weavers, and provides a buyers' directory to the public.

New Brunswick operates much in the same way with emphasis being placed on training, and British Columbia concentrates on assistance in the marketing function. All provincial agencies stress participation in handicrafts displays and exhibits.

In addition to these governmental agencies there are a number of voluntary organizations which perform similar functions. Largest of these is the Canadian Handicrafts Guild, which maintains branches in every province and shops in several cities.

Training. Hand weaving instruction is primarily a responsibility of the ten provincial governments. Elementary instruction is given in the public school system or by

TEXTILE INDUSTRIES *photos, courtesy Nova Scotia Tartan Ltd.*



CHAIN WARPS are made at Nova Scotia Tartan Ltd., on this 65-yard section beamer (top). Center: Beaming directly to loom beams is done by reeding the chained sections and drawing through. Bottom: Weaving requires use of both hands to operate shuttle; there are no boxes on this loom.

traveling instructors, and advanced work in a variety of art schools. There is quite a variation in emphasis placed on commercial vs cultural approach in this training.

Distribution. About 60 per cent of Canadian textile handicrafts are directed to middlemen, 20 per cent of the goods are sold directly, and the remainder used personally by the handicrafter.

The work of the agencies at this level has been the greatest contribution to the growth of handicrafts into a major industry.

An Example. Typical of a full-time professional handicraft source is Nova Scotia Tartan Ltd., Halifax, N.S. This company maintains a retail shop, a mill, and commissions work out to home weavers.

In addition to a styled assortment of ties, stoles, scarves, suitings, and dress goods, the company features the weaving of these articles in the official Nova Scotian Tartan. This pattern is registered in Scotland and copyrighted in Nova Scotia, the U. S., and all English speaking countries.

In the mill, 16 female weavers are employed plus one foreman who fixes and supervises. Weavers are paid by the piece, averaging $38-39 per week.

Yarns are warped to a paper beam from a vertical creel in sections up to 65 yards long; each section is removed from the beam and chained. The chains are reeded directly into the loom and pulled through onto the loom beam. All weaving is done on four-harness looms, and shuttles are entirely hand controlled. Most goods are loom finished and require only some burling, mending, and pressing, but some are washed. The mill weaves practically no seconds.

Advances in the Dyeing and Finishing of Man-Made Fibers

BY PAUL L. MEUNIER
E. I. du Pont de Nemours & Co., Inc.

AATCC ABSTRACT

FOLLOWING is a review of some of the advances made in recent months in dyeing and finishing the new fibers:

Orlon. Cationic dye can be applied even in light shades through use of retarding agents which compete with the dyes and decrease the rate of absorption.

Skein dyeing of high-bulk Orlon has been accomplished by modification of skein dyeing machines through use of a double bar skein rack and a hinged deflector plate which controls the flow of dye liquor.

Dyeing of Orlon tow in a stock-dyeing machine has made possible the production of yarn-dyed bulked fabrics.

Single-bath Orlon-wool blend dyeing has been accomplished in ranges of 80/20 to 50/50 by starting the dyeing with cationic dyes selected for their neutral-dyeing characteristics and then adding the wool colors at the boil.

Acrilan. Specific recommendations for knitwear shades are:

Shade	Dyes Recommended
Light	Disperse
Light-medium	Cationic or combinations of cationic and disperse
Medium-heavy	Acid, metallized acid or chrome

Dacron. Dacron is dyed to a full range of shades using disperse dyes. Selected disperse dyes of Acetamine and Celanthrene types are used in conjunction with Latyl dyes, which were developed for Dacron. Most widely used carrier in Dacron dyeing is orthophenylphenol.

Azoic black and navy blue shades are being obtained by use of Latyl Diazo Black B applied simultaneously with Naphthanil AS-D and then subjected to hot diazotization.

Disperse dyes and vat pigments are padded and dried on the fabric, which is then given a Thermosol heat treatment for about 90 seconds at 410 F in application to Dacron and cellulosic blends. Such a process, followed by the chemical pad-steam method, or by jig development with caustic and hydrosulfite, avoids the use of a carrier.

Nylon. Barre and warp streakiness in nylon taffetas can be minimized by any of the following methods:

1. Pretreatment with Duponol D paste followed by dyeing at the boil with selected acid colors.
2. Scour with Duponol D paste and caustic followed by neutral dyeing at the boil in the presence of Duponol D and finishing with acetic acid to exhaust.
3. High temperature (235-250 F) dyeing in the presence of Duponol D and acetic acid.

Triacetate. Arnel triacetate fiber, like acetate, can be dyed with disperse colors, although a dyeing temperature of 205 F is required. A carrier or accelerant or high temperature dyeing at 250 F may be employed for more efficient exhaustion when applying heavy shades. When fabrics so dyed are given a heat treatment for a few seconds at 440 F, good fastness to washing is obtained.

Finishing of Man-Made Fibers. The cationic agents in general produce the best softening effects to increase flexibility or pliability. They may be blended with lubricant emulsion compositions to obtain the desired balance of properties. To obtain durability in laundering, Zelan AP paste and Zelan A Paste Special have been applied in concentrations of about 1%.

Stiffening effects are accomplished by a variety of either thermoplastic or thermosetting resins. The former are applied as aqueous dispersions, the latter as aqueous solutions. The thermosetting resins are insolubilized on the fabric by a heat cure.

Durable water-repellent effects are obtained by the application of special quaternary ammonium type compounds such as Zelan AP Paste, and by silicone products formulated for this use. It is essential that fabrics of proper construction be selected for satisfactory consumer acceptance.

Continuous Bleaching of Cottons With Silicate-Free Peroxide Solutions

BY B. K. EASTON
Becco Chemical Division
and
P. FELDMANN
Dan River Mills, Inc.

AATCC ABSTRACT

SODIUM SILICATE has been accepted as standard for stabilizing alkaline hydrogen peroxide solutions used in bleaching cottons. However, with the advent of continuous bleaching, several serious drawbacks to sodium silicate developed: its tendency to form scale, which is deposited on the surface of equipment; and the difficulty in washing silicate out.

These drawbacks created serious problems in many mills, particularly those handling sheer fabrics or bleaching cloth prior to dyeing, from abrasion marks, broken yarns, and interrupted production.

There is serious doubt that the

peroxide-silicate system would be effective if calcium and magnesium were not present. There is evidence that it is not sodium silicate, but rather calcium and magnesium silicates which are the actual stabilizing chemicals. If this is true, then the calcium and magnesium silicates which form the deposit are an essential component of the system and cannot be eliminated.

We have, therefore, been searching for formulations which would entirely replace the silicates as stabilizers of alkaline hydrogen peroxide solutions without the tendency to form the scale which is so troublesome. We believe we have found formulations which fill our requirements.

Silicate-Free Stabilizer. Calcium phosphate is the desired ingredient for the stabilization. Insoluble in water, the calcium phosphate is formed within the saturator and on the cloth by introducing a borax-buffered solution of disodium phosphate to the saturator. The concentration of disodium phosphate in the saturator can vary over a fairly wide range.

Cotton and water will usually supply sufficient calcium. To be on the safe side, particularly if the cloth has been soured and/or if water of zero hardness is used, a small quantity of calcium chloride solution is continuously added to the saturator.

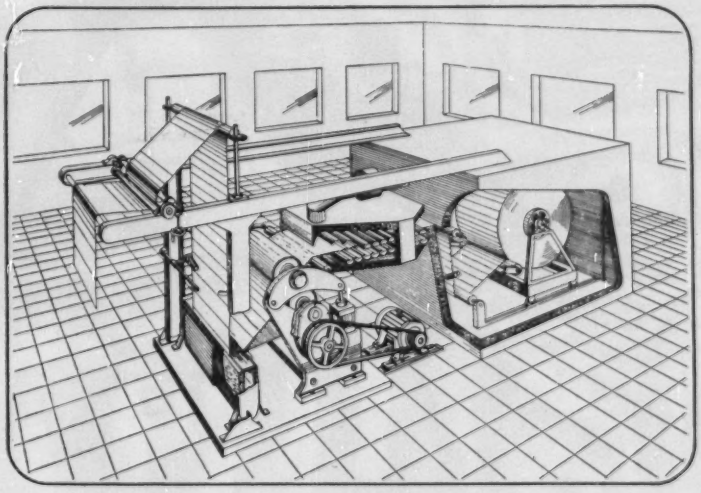
The pH of the saturator solution is critical, and will vary from plant to plant, depending on type of material, treatment prior to bleaching, alkali carryover, temperature in J-boxes, and end use.

Batch and continuous dye results have been highly satisfactory on thousands of yards of cotton cloth bleached by the nonsilicate process.

The new system offers the following advantages: recovery of production previously lost while cleaning scale from equipment, reduction of seconds and rejects due to damage resulting from scale, and elimination of dye troubles caused by silicate compounds left in cloth.

Chemical cost of the nonsilicate formulation was at first estimated to be from 60 cents to one dollar per thousand pounds of cloth higher than a conventional silicate formula, but the results of several plant trials indicate that it may be less.

The Pad-Roll Dyeing System



BY C. O. ERIKSSON, N. O. LANDQUIST, AND B. F. MELLBIN
AB Svenska Textilmaskinfabriken
Gothenburg, Sweden

AATCC ABSTRACT

Principle. The material is padded with dye liquor at a temperature suitable for the dye or dye mixture used. The dye box has a small liquor content.

After padding, the fabric is passed into a chamber in which a practically saturated atmosphere of the required dyeing temperature can be maintained constantly. Within the chamber the fabric initially meets a device for heating by means of infrared radiation, and in this part of the machine the fabric is heated to the desired dyeing temperature, without any change in the state of the liquid phase.

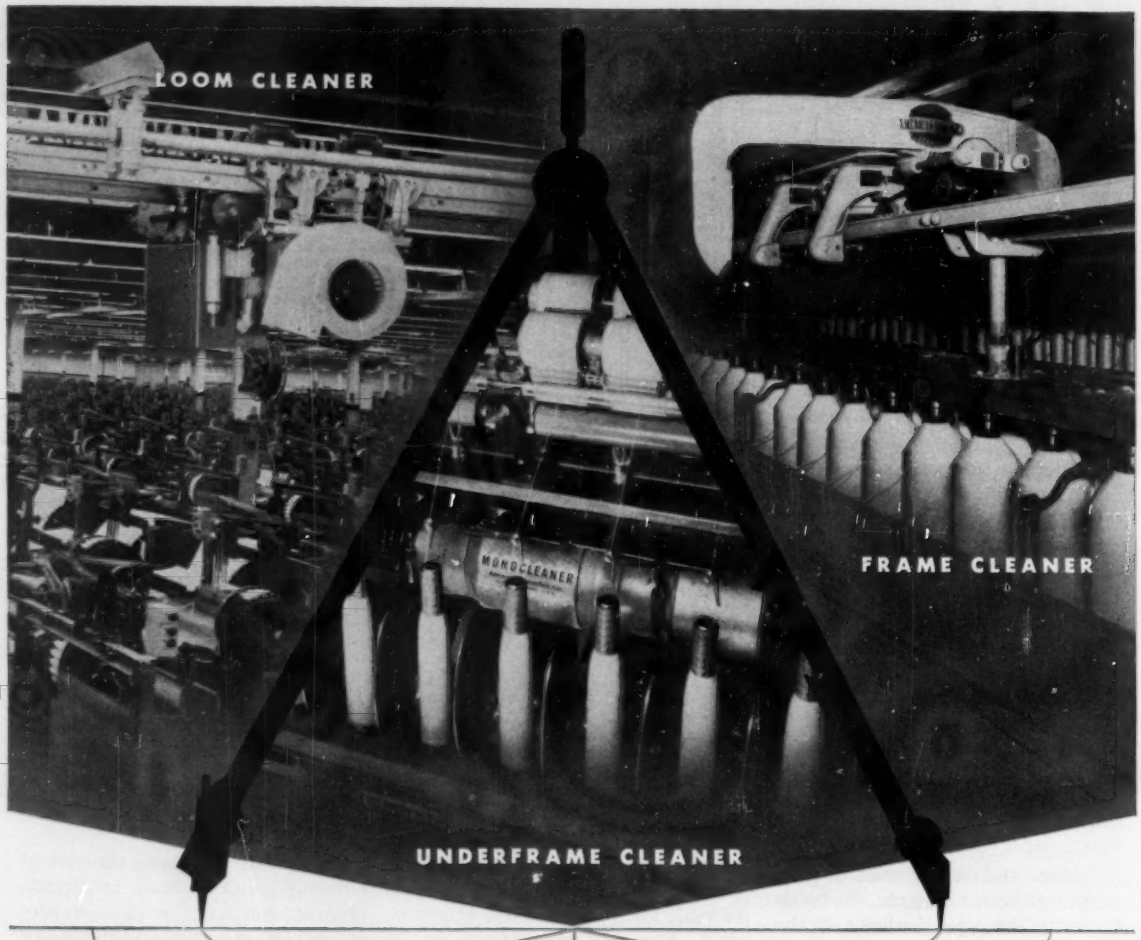
The fabric is wound loosely on a large-diameter roll, which, after being filled up, is slowly rotated for the time sufficient to permit uniform distribution of the dye in the material. Due to the state of the atmosphere in the chamber no change in the liquid phase of the batched fabric occurs during the dyeing-in period.

After this period the cloth is removed for drying, or if required, rinsing and aftertreatment.

Padder. After passing the normal entering devices, such as adjustable stretch bars, a pair of precision cloth-guiders, and necessary guide rollers, the cloth reaches the padder. As in case of all padders for continuous dyeing, the most important requirement to meet has been uniform squeezing within the necessary range of varying the nip pressure.

In order to get as good impregnation as possible before the fabric reaches the nip of the padder, and at the same time reduce substantivity effects by means of a rapid renewing of the dye solution, the fabric has a comparatively long path through the small volume of the padder. The entire volume of dye solution is renewed within one-two minutes at normal running speeds.

Heating Chamber. After padding, the fabric is led over a compensator, regulating the batching motor and cloth tension, into the horizontal heating zone, where it is heated to the predetermined dyeing temperature by means of elec-



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trically produced infrared radiation, acting on both sides of the fabric. The maximum power input is about 36 kw for a 40-inch cloth width machine.

Dyeing Chamber. The fabric next reaches the dyeing chamber, in which it is batched at lowest possible tension. The dyeing chamber is mounted on wheels and is movable. During the time of impregnation the chamber is tightly connected to the heating zone. After being filled up, the chamber is taken away, sealed, and stored at any convenient place during the "dyeing-in" time, during which the batch is slowly rotated by means of a small motor. Thus another chamber can be fitted and a new run started during this period, so that high and practically continuous production can be obtained.

When the "dyeing-in" period is finished, the chamber is taken to a dryer or to a machine for rinsing and aftertreatment of the cloth.

Pretreatment. A treatment given in open width under as low a tension as possible is to be preferred, especially for rayon fabrics. In the case of cotton fabrics, the following procedures may be used: a) desizing and alkaline boiling-off, b) desizing, alkaline boil-off, and an additional bleaching with sodium hypochlorite or peroxide, c) desizing and sodium chlorite bleaching. If the desizing is made by means of a malt diastase and a nonionic surface active agent on the Pad-Roll machine, very good results can be obtained rapidly.

Aftertreatments. After the "dyeing-in" period, the chamber is moved back to the machine for further treatment. In the case of light and medium depths, the fabric can often be dried immediately after dyeing, since all the dye is absorbed. However, dye impurities or added electrolytes sometimes make rinsing necessary, e.g. when the fabric is to be given a crease-resistant treatment afterwards, and these substances would affect the process.

It is generally advisable to rinse after dyeing.

If an aftertreatment is to be given with a dye fixing agent, this, as well as the rinse, can easily be done on an open-width washer, a jig, or a winch machine.

Color Matching. Since no corrections can be made during the dyeing, a simple and reliable laboratory dyeing method is necessary, as for any continuous dyeing method.

Problems in Dyeing and Finishing Tufted Carpets

BY L. L. WALMSLEY, W. S. SOLLENBERGER, AND D. P. FEYLER
American Viscose Corporation

AATCC ABSTRACT

SOME PROBLEMS connected with the dyeing and finishing of viscose carpeting and the methods developed for identifying them as well as helping with their solution are as follows.

Discoloration and Water Spotting. There are three primary causes of discoloration, which have been found to result from inherent impurities in one of the carpet components or from the formation of cellulose degradation products in the pile as a result of finishing technique. Unwashed backing fabrics of either jute or cotton contain large amounts of discolorants which may migrate to pile tips on drying. This is particularly true of stock dyed carpeting, which normally does not receive a sufficient amount of wet treatment to remove these impurities from the backing fabric. Conversely, piece dyed carpeting will seldom show discoloration or spotting as a result of the backing fabric impurities, because during the normal scouring and dyeing operations these impurities are sufficiently removed.

Possibly the principal source of discolorants in rayon carpeting is that of overdrying. The amount of discoloration produced by overdrying depends on the time and temperature of drying and on the pH of the carpet during the drying operation. Drying at a high temperature for a relatively long period of time may cause pronounced discoloration.

Very closely related to the effect of overdrying is the pH at which drying is done. When done at an alkaline pH of from 8 to 9, discoloration may be accentuated; however, when drying is done in a slightly acid condition, discoloration from overdrying is minimized.

In piece dyed carpeting, discoloration may be uniform over the entire carpet as a result of uniform overdrying or it may be nonuniform because of inefficiencies of the particular dryer. This is frequently noticed along the outside edges of carpets, and when side-to-center-to-side shading is a problem it is well to look at the drying operation as well as the dyeing procedures. Similarly, nonuniform extraction before drying may result in discoloration during drying because those areas which have been extracted most will dry more quickly than those areas containing larger amounts of water. Carpet dried in a neutral or slightly alkaline condition can be objectionably discolored if exposed for 5 to 10 minutes at 300 F after the moisture content has been reduced to 1 to 3 per cent.

To eliminate or minimize the tendency toward discoloration during drying, piece dyed carpeting or raw stock should be given an acidic rinse before drying, with acetic acid, boric acid, or aluminum acetate. A pH of 5.5 to 6 will be satisfactory. Direct dyestuffs used should not show an acid sensitivity which results in drastic shade changes.

Drying temperatures in excess of 300 F are to be avoided, and the elimination of nonuniform drying by improving circulation within the dryer will aid in minimizing discoloration. Carpeting taken

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Bend a straight-sided belt (Fig. 2) and feel the sides *bulge out* around the bend. The bulging sides prevent the belt from fitting evenly in the pulley groove (Fig. 2-A). Uneven contact causes uneven wear...shortens belt life...increases costs.

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from the dryer with a uniform 5 to 10 per cent moisture content will rarely contain cellulose degradation products if dried in a neutral or slightly acidic condition.

Overdrying may cause uniform discoloration and so will not be noticed by the manufacturer. In this case, the fault will be found by the consumer when any liquid, even water, is spilled on the carpet, or home spotting techniques are applied. The result will be a yellow-brown ring and a serious complaint against rayon carpets. Alkaline spotting solutions tend to accentuate ring discoloration while acidic solutions minimize it. The slow drying normal to household conditions will itself accentuate migration of these colored materials.

Two cardinal factors apply to the control of rayon carpet finishing techniques: First, the pH must be controlled so that the carpet leaves the bath at pH 5.5 to 6. In the average carpet dyeing machine this will require approximately 30 minutes. Second, proper control of temperatures and times of drying; i.e., 270 to 290 F to leave a uniform 5 to 8 per cent moisture in the carpet when it leaves the final drying.

Soil Resist Treatments. None of the presently used treatments form a permanent soil barrier, but they can retard soiling to the degree that it will not be apparent in an objectionably short time. The best of these materials at present are based on colloidal silica or other metallic oxides, of particle sizes in the range of 0.5 to 10 microns. They do their work by forming a film or coating over the fiber and by filling in the serrations common to many cellulosic fibers. They are effective to the degree that they can reduce the soiling rate of a crimped viscose fiber to the point where it is equivalent to that of the untreated smooth rayon fiber.

These materials are generally applied in a final rinse or by padding or spraying onto the wet but extracted fabric before it enters the dryer. A uniform application is essential, or non-uniform soiling will result. Improper application may result in dusting; that is, if the fine particles of soil resist materials do not adhere properly to the fiber or are present in too great a quantity, a slight agitation of the pile fibers causes them to "dust off" in the atmosphere.

Another frequent criticism of the use of soil resistant treatments is their harshening effect. When these materials are applied, they tend to dissipate the natural softness of most synthetic and natural fibers. Several of the preparations offered today have "built in" softeners. However, some carpet manufacturers have actually found it necessary to compromise soil resistance for reduced harshness. In other words, the amount of soil resistant material applied has been reduced to the point where it is of little value.

The approach to overcoming this problem is that of adding softeners as an adjunct to the soil resist treatment; there are some materials available which aid the antisoiling properties of the treatment and at the same time add an acceptable degree of softness. Some of the cationic softeners, for example, are of value in this connection on vat dyed carpeting.

Tint Selection. A careful selection of tint must be made, giving consideration to the fugitivity of the tint on both the rayon and nylon components of the blend.

A number of tints fugitive on rayon are not applicable to rayon/nylon blends because they are absorbed by the nylon. Variations in nylon content which would not be apparent if the nylon were undyed or lightly stained the same shade as the rayon, will result in streaks when the nylon is dyed a shade contrasting to the rayon as a result of improper tint selection.

Streaks. Streaks in tufted carpeting can be caused at the following points:

(1) Spinning, due to variations in yarn count or twist, improper blending of different lots of rayon staple, nonuniform blending of rayon and nylon, bright and dull components in the yarn, nonuniform blending of different deniers, improper tint selection, and finish application.

(2) Tufting machine, from dull cutting knives, improper needle, and cutting knife alignment.

(3) Improper dyeing technique and dye selection.

It must be remembered when dyeing blends of rayon and nylon that improper dye selection can result in the nylon being dyed a shade contrasting to the rayon from selective absorption of one or more components of the dyebath by the nylon, thus emphasizing blend variations. Dyeing neutral or slightly acid rather than at an alkaline pH promotes absorption of certain direct dyestuffs by the nylon. The result is the narrowing of the limits within which the nylon content of the blend may vary without causing streaks.

Streaks resulting from nonuniform blending where the nylon is undyed may be eliminated by dyeing the nylon with the acetate dyes to match the rayon.

High Temperature Dyeing

BY RAY J. ANDRES
E. I. du Pont de Nemours & Co., Inc.

AATCC ABSTRACT

DYEING AT temperatures above 212 F has expanded remarkably in recent years, and has been used chiefly for dyeing the newer fibers. Although there are several reports before 1940 on dyeing at high temperatures, it was about this time that the first effort to dye a fiber (wool) on a commercial scale was begun. Further application is reported in Europe but widespread use of this technique began only five years ago. Extensive use today speaks for its advantages.

Selection of Dyeing Temperature. In aqueous systems, the higher the temperature the greater the

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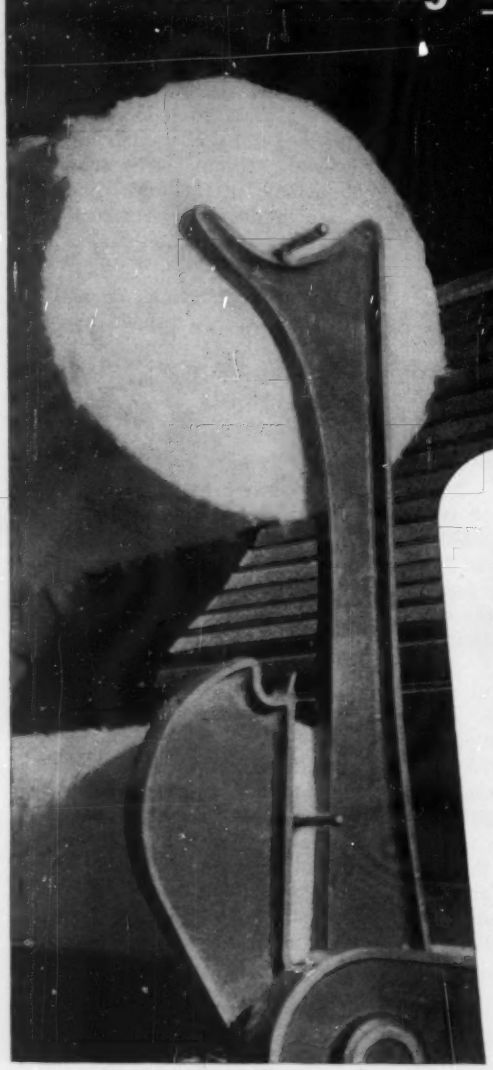

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TUFFER PRODUCTS Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Re-covered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plants • Midgley Patented, and Howard's Special Hand Stripping Cards • Top Flat Chains

initial penetration of the dye into the fiber. The rate of dyeing increases with temperature, but fiber or dye instability may be a limiting factor. Thus dyeing temperatures for each fiber are at best a compromise to give the optimum result.

Cellulosic fibers such as cotton and viscose rayon are not harmed at temperatures up to 250 F, and many of the direct and vat colors are stable at this temperature. However, the affinity of the usual dyes for cotton or rayon reaches a maximum near 180 F, and is always much less at 250 F. Suggestions have been made that dyeings be started at the higher temperature, for thorough penetration, and reduced to the lower temperature for economic color yield.

Wool is stable for short periods (up to one minute) at temperatures as high as 390 F. However, 220-225 F is the recommended maximum for long exposure. The pH should be 5, but the range of 3 to 6.5 seems safe. No mineral acid should be used, and formaldehyde solution offers some protection for the wool.

Nylon is stable at temperatures of 250 F except in the presence of strong mineral acids. More level dyeings than at 212 F are obtained with acid dyes and the Capracyl types.

Dacron is stable at 250 F in the pH range of 3.5-8. Carriers are not required, and levelness and fastness are generally better at these higher temperatures.

Type 81 Orlon can be dyed in a full range of shades at 250 F. The cuprous ion method for applying acid dyes may also be used.

Type 42 Orlon can be dyed a full range of shades at 212 F with cationic dyes, but a temperature of 225 F is safe for the fiber and offers economies in dyeing time and improved transfer.

Dynel and cellulose acetate should not be dyed above 212 F because of excessive softening.

Acrilan can be dyed at temperatures slightly above 212 F.

Where two or more fibers are dyed in the same bath, the lowest safe temperature is the limiting one for the mixture. A dyeing assistant or carrier may be required for economic color yields on fibers preferably dyed at higher temperatures.

Pressure Dyeing and Drying in Closed Systems

BY FRED THIES
B. Thies, Coesfeld, Germany

AATCC ABSTRACT

BASED UPON the fact that the more heat energy fed to the packages, the shorter the drying time, a new and completely closed drying system has been designed. This consists of the usual items—a blower, a heating battery, and a completely closed drying kier. An indirect cooling device is fitted to the outlet of the drying kier and from this a connection is made to the suction side of the blower.

The air coming from the blower is heated up in the heating system, forced through the packages and then passed through a cooling battery where it is cooled down and the moisture separated. By controlling the rate of flow of the cooling water in the cooling battery, more or less moisture can be left in the air for recirculation.

Drying time is greatly reduced because it is possible to subject the whole circulation to a static pressure before the drying process is started. The blower circulates a certain amount of air, exactly as at normal atmospheric pressure. This quantity of air has, however, a multiple heat absorption capacity. As the heat energy is proportional to the weight of the air, four times the amount of heat energy can be fed to the packages with the same quantity of air at a pressure of 32 psi than at normal atmospheric pressure. At the actual working pressure of 85 psi which we use, the same amount of air contains eight times more heat energy than at normal atmospheric pressure.

However, the drying periods are not reduced in the same proportion as the heat absorption capacity of the air is increased. For instance, at a static pressure of 32 psi with the blower output and other working conditions remaining unchanged, the drying time can be halved compared with a drying process carried out under normal atmospheric pressure. When using a pressure of 85 psi the drying time can be reduced to one-third.

With the same volume of compressed air circulated, the resistance offered by the carrier, spindles, and tubes is not increased or only very little compared with the air circulating under normal atmospheric pressure, since actually the volume of air and consequently the circulating speed of the air through the material does not change.

Another advantage of this closed circuit drying system is that the amount of moisture being recirculated to prevent partial overdrying is, or can be, considerable. The quantity of moisture being recirculated through the packages can easily be controlled by the temperature to which the air coming out of the packages is cooled down.

The process works as follows:

First of all the air is circulated through the packages from outside to inside. Thus we not only obtain a thermal drying effect, but also a mechanical hydro-extraction to a remaining moisture content of about 70%, obtainable because of the high density of the compressed air.

Subsequently, when the air outlet temperature is constant and evaporation starts, the four-way cock is reversed so that the air flow is then from inside to outside. This main drying process from inside to outside is continued until the gauge indicates a rise of the outlet temperature of the air coming from the packages.

Then the four-way cock is reversed again and the final drying

is effected with an air-flow from outside to inside to avoid an overdrying of the interior yarn layers and to have a better circulation of hot air through the edges of the packages.

When the drying has reached its final stage, cooling of the air coming from the packages can be stopped so that more moisture is recirculated. This insures uniform drying and avoids any overdrying of the packages. Owing to the much larger amount of heat energy which is fed to the packages because of the compressed air in the unit, the average drying period is about 30 to 40 minutes.

High-Pressure Dyeing. I would now like to discuss the possibility of dyeing packages under a static pressure as distinguished from the normal type of pressure dyeing where the pressure is exerted by a pump on the inside or outside of the package.

One system I should like to call the high *temperature* dyeing apparatus, as distinct from the high *pressure* dyeing apparatus. The high temperature apparatus consists of a completely closed expansion tank and the air contained in it expands at high temperatures, thus producing a static pressure corresponding to the temperature used. Thus the liquor is prevented from boiling at temperatures above the boiling point. It relies upon the circulating liquor to produce the static pressure. Static pressure is only built up when temperatures near or above the boiling point are reached and is gradually increased by raising the temperature.

The high pressure dyeing apparatus differs from the high temperature machine in that it operates under a predetermined artificial pressure which sets the apparatus and the liquor contained therein under a static pressure predetermined at the beginning of the process. A separate pressure pump builds up the static pressure by forcing additional liquor into the system, which in turn compresses an air cushion in a small expansion tank, thus setting the complete system under static pressure. By the use of this same pressure producing pump it is possible to make additions of dyestuffs and chemicals during the dyeing process from an open or closed addition tank. The high pressure dyeing machine is a combination machine in which you can dye under high temperature also.

The rate of exhaustion, the liquor flow, and the length of the dyeing cycle are the major factors in level dyeing. When applying static pressure at normal vat dyeing temperature the even penetration of the dyestuff into the fiber takes place in a considerably shorter time. The rate of exhaustion can also be controlled by pressure. We have found that with a number of vat dyes, the controlled exhaustion of the dye bath under pressure develops a better color value in a shorter time. However, the application of pressure does not have equal effect on all vat colors as regards exhaustion. There are a few rapid-exhausting colors where the exhaustion will be less at a higher pressure and greater at a lower pressure than under normal dyeing conditions. Furthermore we have found that as the pressure is increased above a certain point a resulting increase in exhaustion and levelness does not occur.

A very substantial saving in chemicals is possible with the high pressure machine as compared with the conventional type dyeing machine. The use of leveling or retarding agents can be eliminated or at least substantially reduced. An appreciable amount of saving can also be made in the use of hydrosulfite and caustic. Further, high pressure helps to eliminate cross-overs, blown beams, and shading, while at the same time it improves the penetration of hard edges.

Dyeing and Heat Treatment of Arnel Triacetate

BY FRED FORTESS
Celanese Corp. of America

AATCC ABSTRACT

ARNEL CELLULOSE triacetate is a hydrophobic fiber, resistant to swelling, and intermediate in dyeing properties between regular acetate and Dacron. During the last year a wide variety of fabrics have been adapted to existing dyeing facilities with the achievement of a full range of shades having a high level of wash-, gas-, and lightfastness properties.

Dyeing. A selected list of disperse acetate dyes is shown in the table [on page 135]. They were selected on the basis of optimum washfastness at the No. 3 AATCC test level (160 F), minimum sublimation at heat treatment temperatures (425-450 F), and optimum light and gas fading fastness. In addition these dyes must have good bath stability at 200-212 F, economical exhaustion rates and pileon, and must respond to accelerant action for heavy shades.

Several of the heavy shades require a wash after heat treatment to improve the staining properties as well as to stabilize shade and hand of the fabric. Peracetic acid, Textone (sodium chlorite) and sodium hypochlorite under acid conditions result in excellent bleached whites.

The greatest advances have been made in dyeing of blends of Arnel with cotton, rayon, and wool.

Heat Treatment. The Morrison two-roll machine provides a versatile means for processing a large variety of Arnel fabrics. Optimum air temperatures and fabric speeds must be established for each fabric weight. Thus a light weight continuous filament fabric will require an air temperature of 435 F and a fabric speed of 35 yards per minute, whereas a heavier spun

Selected Dispersed Dyestuffs for Arnel

	AATCC TESTS									
		#3 Wash (160 F)*						Light-		"O-Fading"***
		Shade	Staining			Gas Fading**		fastness**		
Dyestuff	Sublimation*	Change	Nylon	Acetate	Bath	1 Unit	2 Units	20 Hr.	40 Hr.	18 Hr.
Eastman Blue GLF	4-5	4-5	5	5	Practically None	4-5	4	4-5	4	2
Lenra Blue RLS	4	4-5	5	5	P. N.	4-5	4	4-5	4	2
+Interchem Blue GSF	4-5	4-5	4	5	P. N.	4-5	4	4-5	4	2
Cibacete Blue GLF	4-5	4-5	4	5	P. N.	4-5	4	4-5	4	2
Latyl Blue FL	4-5	4-5	4	5	P. N.	4-5	4	4-5	4	2
Celliton Blue LAFR	4-5	4-5	5	5	P. N.	4-5	4	5	4	2
Nacelan Blue KLF	4	4-5	4	5	Light	5	4-5	4-5	4	2
Latyl Blue BG	5	5	5	5	Light	5	4-5	5	4-5	2
Eastone Red GLF	4-5	4	4	4	Light	5	5	4-5	4	5
+Interchem Red GSF	5-4	4	4	4	Light	5	5	4	3-4	4-5
+Interchem Scarlet GSF	4-5	4	4	4	Light	5	5	4	3	4
Celliton Red GGLL	4	4	4	4	Light	5	5	4-5	4	5
Eastone Fast Red 2BGLF	4	4	4	3-4	Light	5	5	4	3	4-5
Eastone Fast Pink 3BGLF	4-5	4	4-5	4-5	Light	4-5	4-5	4	3	4-5
Cibacete Red GGF	4	4	4	3-4	Light	5	5	4-5	4	5
Celliton Fast Red 6DAC	4	4	5	5	P. N.	5	5	4-5	4-5	2
Celanthrene Violet BGF	4	4	5	4	P. N.	4-5	4	4-5	4	2
Eastman Violet 3RGLF	4	4	5	4	P. N.	4-5	4-5	4-5	4	2
Nacelan Red 2G	4-5	4	4	4	P. N.	5	5	4-5	4	5
Lenra Yellow CW	4-5	4-5	4-5	4-5	Light	5	5	5	4-5	5
+Interchem Yellow HDLF-40	4-5	4-5	4-5	4-5	Light	5	5	5	4-5	5
Celliton Fast Yellow GGLL	4-5	4	4-5	4	Light	5	5	5	4-5	5
Latyl Yellow YL	4-5	4-5	5	5	Light	4-5	4-5	4-5	4-5	5
Eastone Fast Yellow 2RGLF	4	4-5	5	3-4	P. N.	4-5	4-5	4-5	3-4	5
Artisil Yellow RCGFL	4-5	4	5	4	Light	4-5	4-5	4-5	4	5
Cibacete Yellow GWN	4-5	4	5	4	P. N.	4-5	4-5	4-5	4	5
Nacelan Fast Yellow KAL	4-5	4	5	4	P. N.	4-5	4-5	4-5	4	5

*3% dyeing **0.5% dyeing +Now called Interchem Triacetate Blue, etc.

fabric requires an air temperature of 450 F at 20 yards per minute. Spun fabrics tend to shrink up to five per cent in width.

Other machines used for heat treatment include the National six-roll machine, radiant heating panels installed at the exit of a pin frame, and roller and loop cure boxes.

Effect of Dyeing Accelerant in Jig or Winch Dyeing of Arnel

1. Produces more balanced dyeing since azo, diphenylamine, and anthraquinone dyestuffs are all accelerated.

2. Permits earlier dyestuff addition for shade matching, thus permitting dyeing of dispersed navies and blacks in five to six hours.

3. Increases penetration of dyestuff into fiber, permitting achievement of optimum washfastness.

4. Permits use of less dyestuff and results in greater per cent dyestuff exhaustion in commercial times.

5. Provides better control of initial dyeing rate or strike, thereby minimizing leveling difficulties.

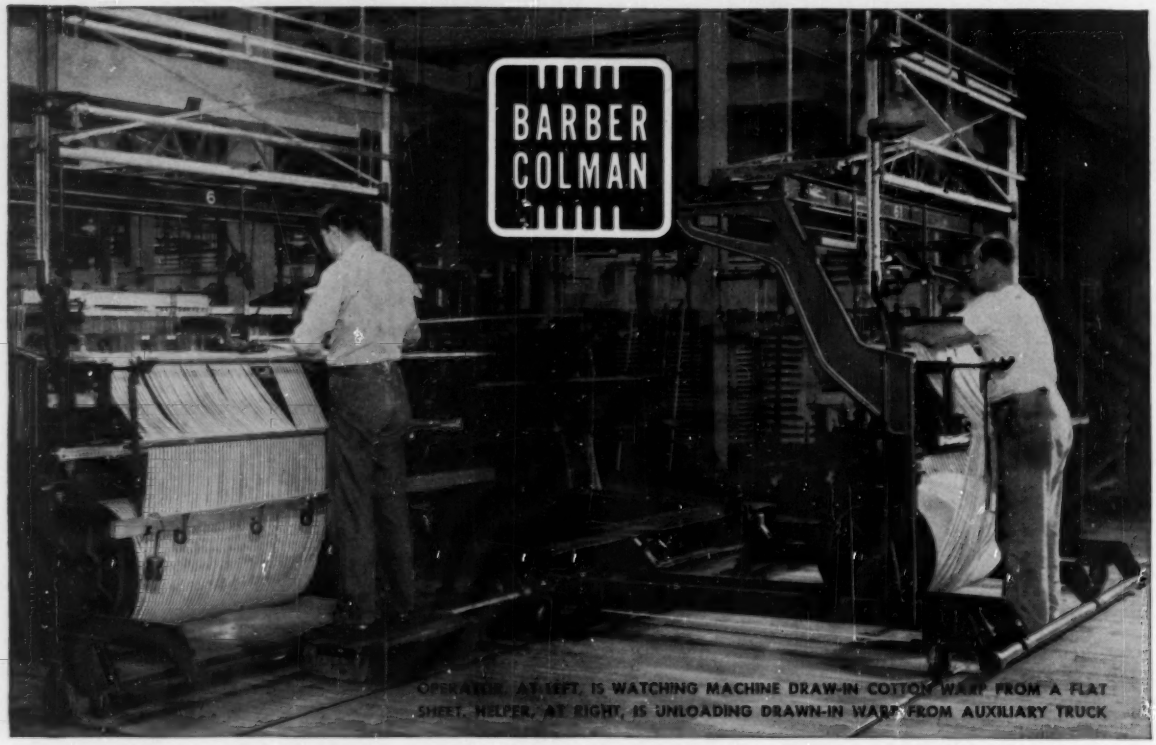
Bishopville Finishing Adopts American Standard L-22

At a press conference held in the offices of the National Retail Dry Goods Association on September 14, 1955, the Bishopville Finishing Plant of Reeves Brothers, Inc., announced its intention to finish certain textiles in accordance with American Standards L-22 ("The American Standard Minimum Requirements for Rayon and Acetate Fabrics"), development of which was sponsored by the NRDGA. Extracts of statements by officials of NRDGA and ASA are presented here:

National Retail Dry Goods Association. "The National Retail Dry Goods Association enthusiastically hails the decision of Reeves Brothers to process goods in its Bishopville Finishing Plant which adhere to quality standards set forth by the American Standards Association.

"It is particularly noteworthy that this quality program is being activated at the very time that stores and the public place a premium on quality of consumer goods. Not only does the NRDGA feel that the Reeves program is a milestone in textile history, but that it also points the way to similar action by all finishing plants." *—Benjamin H. Namm, president of Namm-Loeser's, Inc., Brooklyn, and member of board of directors of NRDGA.*

American Standards Association. "We believe this new step will grow into improved public acceptance of rayon, acetate, and mixed fabrics. We hope that this action will encourage wider par-



OPERATOR, AT LEFT, IS WATCHING MACHINE DRAW-IN COTTON WARP FROM A FLAT SHEET. HELPER, AT RIGHT, IS UNLOADING DRAWN-IN WARPS FROM AUXILIARY TRUCK

A MACHINE WITH SHARP EYES, QUICK HANDS, AND AN AUTOMATIC "BRAIN"...

If you want to see the complete list of mills now using these machines, and the types of products they weave, write for a copy of the "Users List" shown above. *Ask for Bulletin F 6354.* It is available also in French and German translations.

The operation of drawing-in new warp through drop wires, heddles, and reed is an ever-present problem in all types of weaving. In the old days it was done entirely by hand, and still is in some places — a tedious and tiresome task. The advent of the Barber-Colman Warp Drawing Machines has changed all that, so that you now have a wide range of equipment to suit all needs. Barber-Colman Warp Drawing Machines draw-in the drop wires, the heddles, and the reed *all in one operation.* A needle, operating at 75 strokes a minute or better, picks up each end in sequence and draws it through the proper apertures. Each opening is correctly presented at each stroke of the needle, this selection being accomplished automatically from a metal pattern strip punched in accordance with the designer's draft. Thus the human eyes, hands, and brain have been supplanted by a mechanism that is sharper of vision, quicker of movement, and practically infallible. Results, in mills across the country, and in lands across the sea, show a consistent record of improvements and economies of many kinds. Application is *not* limited to only the larger mills; it is determined actually by the work to be done. *Barber-Colman representatives are qualified by long experience to make a detailed study of your requirements—and to make a proper recommendation if one is justified.* Ask *your* Barber-Colman representative for details.

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ticipation by the textile industry in the current L-25 project, which is developing standards in the field of all textiles other than rayon, acetate and mixed fabrics.—*Arthur S. Johnson, chairman, Standards Council, ASA, and vice-president, American Mutual Liability Insurance Company, Boston, Mass.*

Values of Wool Conference To Scientist, Mill, Consumer

Textile Research Institute leaders say Australian meetings pinpointed areas for future study; need for improving scouring method stressed; C.S.I.R.O. program is called "outstanding."

CLOSE TIES between the wool growing industry and well-organized research facilities in Australia have enabled research to "pay off" in a direct and clear-cut manner for the Dominion wool grower, two U. S. textile scientists reported following their return from the first international wool textile research conference in Australia.

"Australia leads the world in instituting and applying research on wool production," according to Dr. John H. Dillon, director of the Textile Research Institute, Princeton, New Jersey. "For, in Australia, more than in any other country, wool growers have seen the results of research and felt them in their pockets."

The role of research in enabling wool grower to tailor his product to the specific needs of the wool textile industry was stressed heavily in sessions of the Australian conference, it was emphasized by Dr. Dillon and Dr. John Menkart, head of the wool research project at the Institute.

In addition to reviewing recent wool research developments, Dr. Dillon reported, the gathering of 100 top textile scientists pinpointed areas where new research is needed. One question facing research men is to determine whether special properties attributed to the wool fiber by the growing and marketing segments of the wool industry can be measured and expressed for the mill, he continued.

Such descriptive terms as "soft," "harsh," and "shabby" — used in selling wool—have considerable influence on price, Dr. Dillon said, but they are not measured quantitatively, and apparently have undefined importance at the mill level.

"What must be determined," Dr. Dillon continued, "is whether diameter and crimp are the only factors that must be known in grading wool, or if these specially coined descriptive terms do have real significance in processing and fabric performance. If they do, some accurate means of measuring and expressing them for the mill must be found."

What Qualities Do Mills Want in Wool? The task of relating biological advances to mill processing presents a serious challenge to all phases of the worldwide wool industry, Dr. Menkart reported. There is real concern among research men, he continued, because biologists now know that they can control such factors as fiber diameter, length, and crimp through breeding—but they lack a clear-cut knowledge of what specific properties mills want.

Questions along this line were raised at a special discussion session held in conjunction with the Australian research conference, where the present position was summarized by Dr. Menkart and Dr. Helen Newton Turner of the Commonwealth Scientific and Industrial Research Organization.

This special session sought to determine, for example, whether wool textile mills actually require a careful control of fiber diameter, and whether a general increase in fiber length — made possible through new breeding techniques —would create problems in current mill processing of wool.

The international conference—which was held in the three key Australian research centers: Sydney, Geelong, and Melbourne — spotlighted research developments of potential benefit to grower, mill, and consumer, Dr. Dillon reported. Probably of greatest potential value to the mill, he said, would be an improved scouring process. Several new approaches to the scouring problem were outlined at the conference.

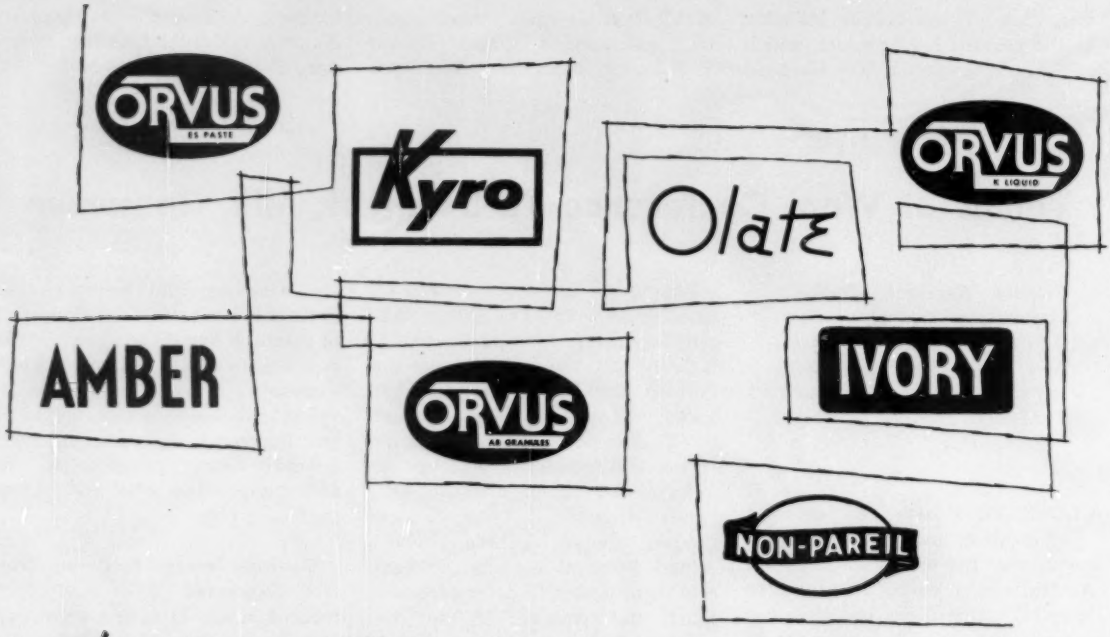
Growing Interest in Crimp Control Expressed. The conference focused much attention on crimp and crimp control, the Princeton research leaders reported. Now that crimp control is becoming less difficult, Dr. Menkart asserted, the growing industry could benefit greatly by knowing the processing industry's specific crimp requirements. Of course, he added, the same crimp level is not required for all purposes.

It was Dr. Menkart's suggestion at the conference, Dr. Dillon reported, that wool growers may need to establish two crimp types for each quality of wool. In other words, he explained, 64s would be available with either a high or low crimp level.

Reports delivered at the conference indicate that the bilateral structure of the wool fiber's cortex is now an accepted fact in all research quarters, and that the so-called para and ortho portions of the cortex are closely associated with crimp.

It was generally agreed at the conference that significant variations do occur in wool, Dr. Dillon reported. Current research into the structure of the fiber will seek to measure and evaluate these variations in the future, he said.

Special Finishes to Benefit Consumer. Greatest consumer interest in the conference was generated by reports dealing with special finishes and processes for changing



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For example, there's Orvus K Liquid, a concentrated modified fatty alcohol sulfate, preferred by many mills because it permits stock solutions to be made up so quickly and accurately. The choice of many other mills is for Orvus AB Granules, popular because of its outstanding performance and the convenience of its free-flowing, easy-to-measure granules.

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ERIEZ SPIKED-APRON MAGNET SPIKES METAL DAMAGE. Lawrence Garnet Co., Lawrence, Mass., produces garnet specialties of silk and worsted, white worsted and merino. As a precaution against tramp iron damage to the machines, Eriez Spiked-Apron Magnets were installed in the feeder boxes. This step proved highly successful, and the magnets removed large quantities of knitting needles, pieces of spindles, ring travellers, etc., from the processing lines. Previously, any metal such as this would put the machine out of use for days or even weeks, seriously curtailing production. So efficient were the magnets in preventing tramp iron damage, thus saving thousands of dollars, that when the company recently installed new machinery, it would not use it until Eriez Permanent Magnets had been added.

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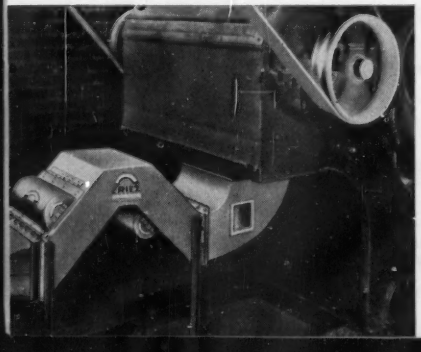

ERIEZ MAGNET IS WATCHDOG FOR THIS FLOCK. Cellusuede Products, Inc., Rockford, Ill., manufacturer of rayon, cotton and hair flock, protects its reputation and costly cutting knives with an Eriez Plate Magnet that pulls dangerous tramp iron from the raw material before it reaches the knife blades. The finished flock, used as a coating material for textiles, paper, metals, etc., and as a reinforcing material to strengthen rubber and plastic compositions, *must* be entirely free of metal contamination. Since installing the magnet, there has been no trace of stray metal, no damage to knives by tramp iron.

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Eriez, free booklet "Magnetic Ideas" can help you. Send for it without obligation. Address: Eriez Manufacturing Company, 72Z Magnet Drive, Erie, Pa. Or, on your specific request Eriez' factory-trained field men backed by Eriez' laboratory and engineering know-how will be happy to study your particular problem, make a plant survey and offer helpful "Magnetic Ideas".

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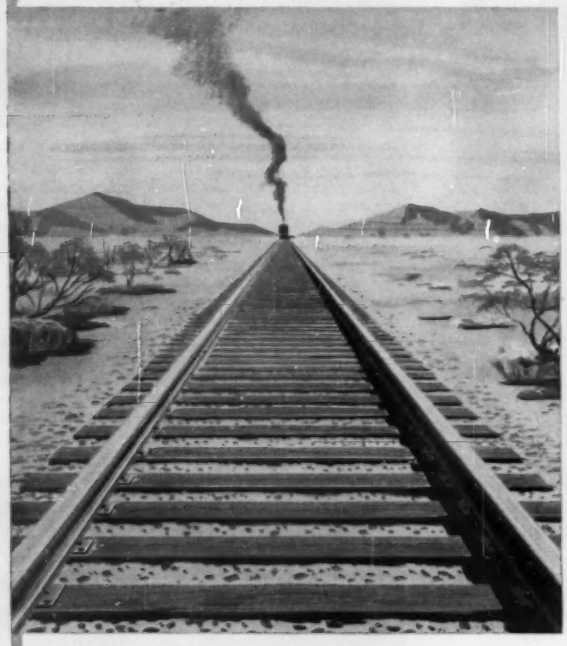

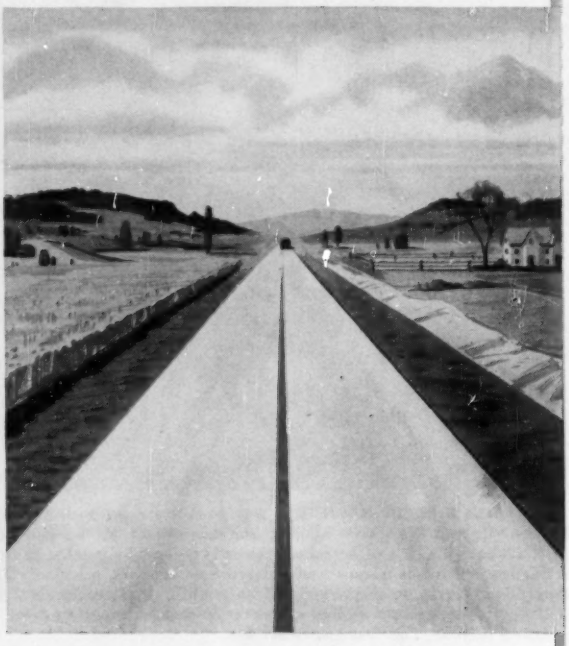

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the behaviour of the wool fiber, Dr. Dillon noted. New and improved methods of moth-proofing, shrink-proofing, and imparting special fiber characteristics were brought closer to reality through the interchange of ideas among leading research figures, the two U. S. scientists agreed.

[*Several conference items of special interest to textile manufacturing personnel appeared in* TEXTILE INDUSTRIES *for November,* 1955. *See New Method for Bleaching Wool?, page* 85; *New Protein Fibers from Dissolved Wool?, page* 87; *Solvent Degreasing of Wool, page* 89; *Quick Method for Determination of Residual Mineral Acid in Wool, page* 217—*Eds.*]

Mill-Made Cutter Assures Uniform Spinning Tapes

STAFF PREPARED
EXCLUSIVE

CHINA GROVE Cotton Mills, China Grove, N. C., is able to cut more uniform spinning tapes and subsequently obtains more uniform spindle speeds with an attendant improvement in quality of yarn produced. The spinning tapes are cut to length on a special tape-cutting machine conceived and made by Ashley Roberts, assistant superintendent, and John Nicholson, master mechanic, at China Grove.

Many mills have a roll of tape in a bin, and the tape is simply pulled off to measuring marks and cut for sewing or splicing. However, if uniform lengths are to be obtained, the same amount of tension must be maintained on each piece of tape cut. The machine was made to account for the tension factor.

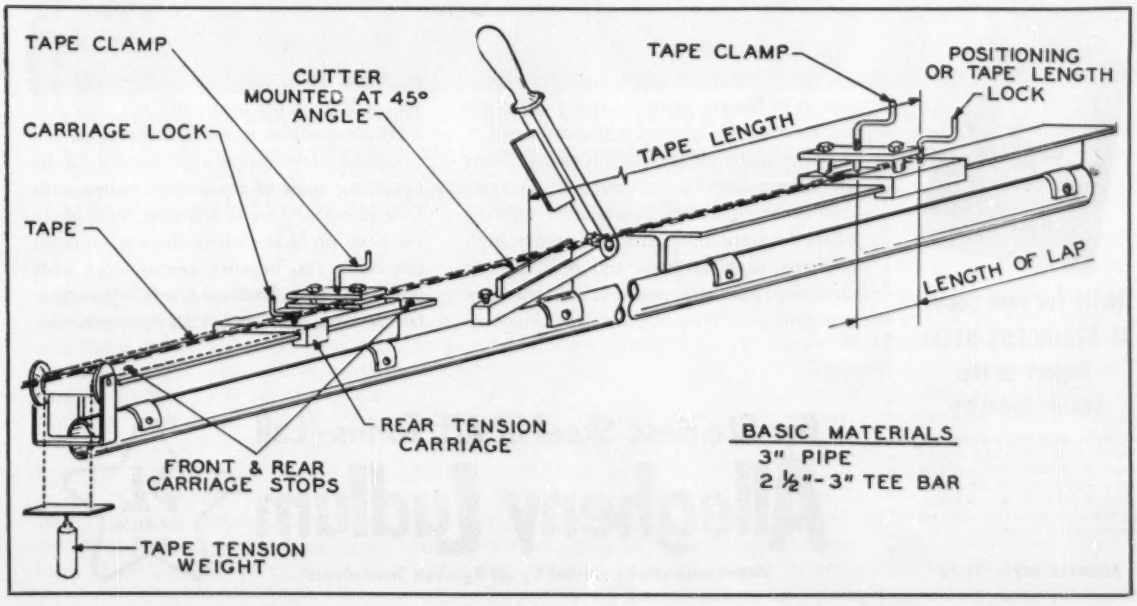
China Grove uses a 45-degree taper on each end of the tape with a three-inch lap for splicing. Management at this mill considers it desirable to have all tapes precut to length to be issued from the supply room ready to sew. This procedure assures that all tapes are cut by the same measuring device, under the same tension, and under similar conditions by one operator.

This mill has about 14 different lengths of tape to cut; therefore, the machine is made to accommodate all different lengths. Once the length of tape is determined and checked, a setting is established from which to make others. A lap mark is placed on each tape to assure uniform length after sewing.

Description. The tape cutting and measuring device (see accompanying illustrations) is mounted on a piece of pipe and includes an adjustable head clamp with a 45-degree edge for marking the three-inch lap. The cutting blade is mounted at a 45-degree angle, and a carriage has a clamp with a weight attached to provide uniform tension on the tape before cutting.

Operation. First, the tape is

SPINDLE-TAPE CUTTING DEVICE was designed and built by Ashley Roberts, assistant superintendent, and John Nicholson, master mechanic, at China Grove Cotton Mills Co., China Grove, N. C.



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SEQUENCE OF OPERATIONS of the tape cutter: **1.** End clamp is set at 45° angle; mark establishes three-inch lap at 45°. First step is to clamp end here. **2.** Tension carriage clamp is locked and carriage released to permit tension weights to stretch tape. **3.** Weight pulls carriage against stop when tape is cut. Carriage is then moved forward and locked by set screws to start cycle again. **4.** Pipe with T-iron attached for tape-length scale. Ten to twelve feet is average length of tape in this plant. This device permits cutting tapes up to 15 feet in length. **5.** Fourteen different tape lengths and about 300 of each size comprise inventory.

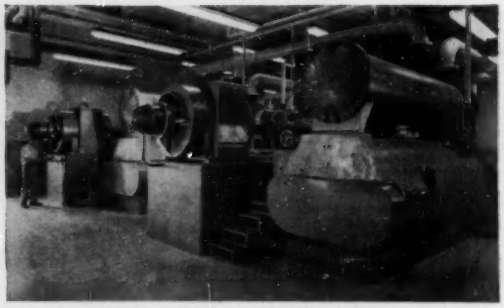
fastened in the end clamp. The carriage has a front and back stop, and the carriage is brought to forward stop (see illustrations) and locked in position to start the cycle of operation. Then the tape is clamped to the carriage, and the carriage is released.

The released carriage is pulled back by the suspended weight, which applies the same tension to each piece of tape. Next, the tape is cut by the blade, and the carriage falls against the back stop ready for another cycle after releasing the cut tape.

Advantages. Tapes are now much more uniform, and responsibility for cutting tapes correctly may be placed on one person. An easy and accurate way of accounting for the number of tapes used is possible because only cut tapes are issued now; formerly rolls of tape were issued to each department and tapes cut as needed.

Uniform tapes provide uniform tension on driving cylinder of spinning frames and whorls which gives more uniform spindle speed with an attendant improvement in quality, twist, and uniformity of breaking strength of yarn. This system also eliminates much wasted tape.

AMEROTRON MILLS REFRIGERATE WITH CARRIER CENTRIFUGALS



At the heart of the air conditioning systems for Amerotron Corporation at Raeford, N. C., are two Carrier Centrifugal Refrigerating Machines. These two centrifugals—each with a capacity of 1090 tons of cooling—chill the water for nine separate air conditioning systems within the gigantic plant.

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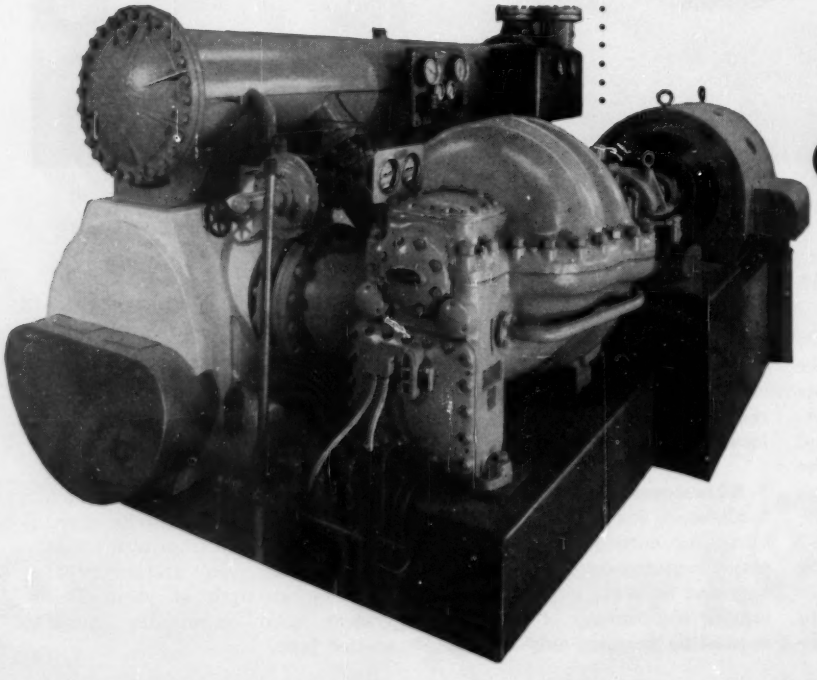

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"We licked our condensation problem because FOAMGLAS insulation stays dry in 64% humidity!"

states Donald Purrington, Supt. of Engineering, William Skinner & Sons, Holyoke, Mass.

Freedom from condensation is vital to quality control in the Holyoke, Massachusetts mill of William Skinner and Sons . . . home of world-famous Skinner silks and satins. The constant efficiency of *stay-dry* FOAMGLAS roof and wall insulation helped lick their condensation problem.

Mr. Donald Purrington, superintendent of engineering at the Holyoke mill relates: "The everchanging New England weather and high inside humidities made condensation a serious problem. That problem doesn't exist in our new FOAMGLAS insulated mill, built in 1948.

"Seven years' service has proved to us that FOAMGLAS stays dry for constant insulating efficiency—despite the 64% humidity we must hold for best loom operation. We get precise temperature-humidity control needed to prevent condensation, and have had no insulation replacement."

Mr. Purrington concludes: "In a high moisture situation like ours, it would be a definite mistake to use an insulation with less than the fully moisture-proof quality of FOAMGLAS!"

Take a tip from Skinner! Solve *your* insulating problems with FOAMGLAS, the cellular glass insulation that *stays dry* to give you long-lasting insulating efficiency. It's strong, fireproof and rot-proof, too. Send today for a sample and our latest literature describing the use of FOAMGLAS to insulate: (1) roofs, ceilings, walls and floors; (2) cold storage spaces; or (3) piping, tanks and other equipment. Indicate your specific interest.

Pittsburgh Corning Corporation

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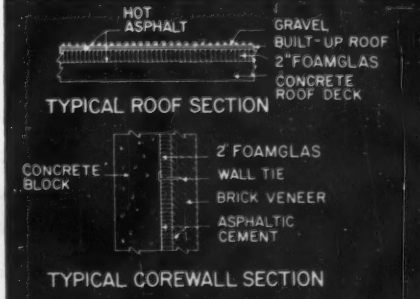
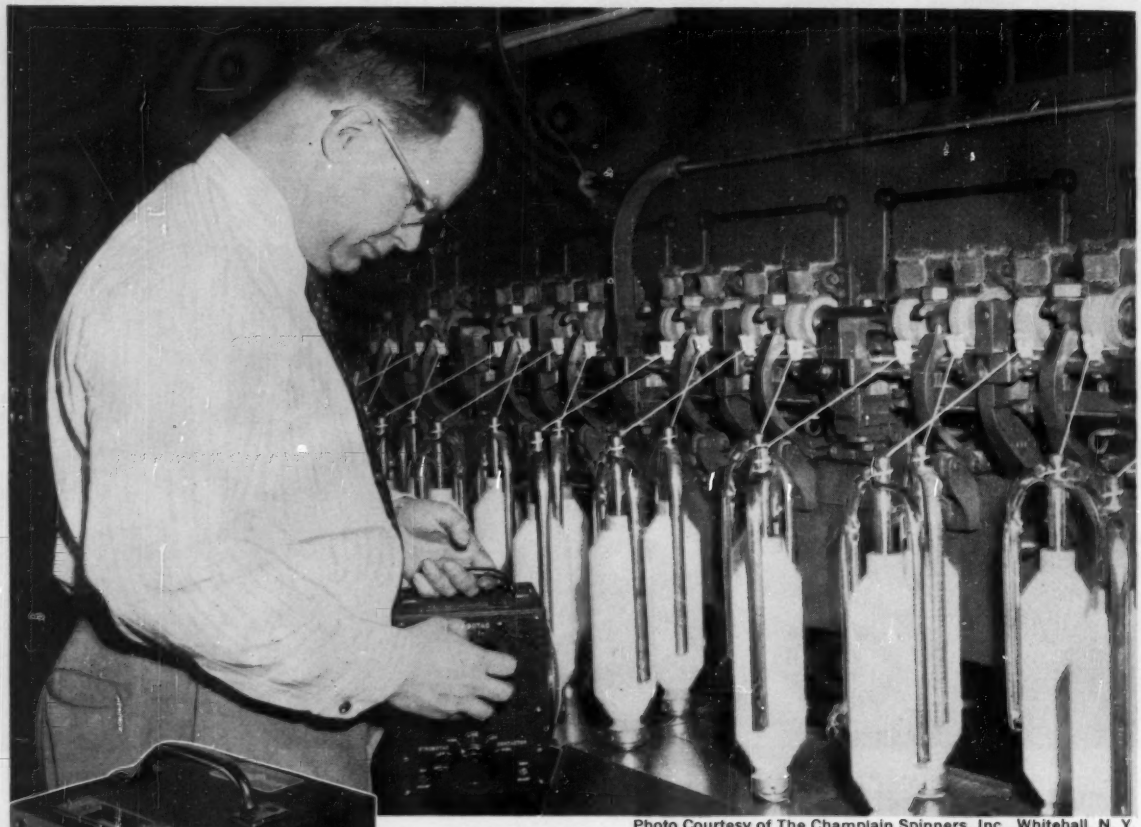
Pittsburgh 22, Pennsylvania
In Canada: 57 Bloor St. W., Toronto, Ontario

Mr. Purrington is shown on the FOAMGLAS insulated roof of Skinner's Holyoke Mill. He reports: "The unusually high strength of FOAMGLAS eliminated all possibility of damage from roof traffic. Its effectiveness has exceeded our expectations."
Engineers: Lockwood Greene Engineers, Inc., Boston, Mass.





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- ★ Spindle speeds
- ★ Belt and tape slippage
- ★ Transfer of bobbins
- ★ Slap of the balloon
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- ★ Crooked, worn or unbalanced bobbins
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Use Care When Handling Zero Twist Yarn!

THROWSTERS as well as other types of textile mills receiving continuous filament "Dacron" yarn from the manufacturer, are reminded that it is a zero twist yarn and because of this it is susceptible to damage when incorrectly handled.

The accompanying photos show how to open a case, remove the tubes from the case, remove the wrappers, handle the tubes, and transport them from the case to the twisters.

These additional suggestions are offered:

Storage. To prevent disarrangement of the yarn package formation, don't drop or handle the cases roughly. Always store in upright position, avoiding extremes in both temperature and humidity. Use yarn shipments in order received.

Mix Prevention. To prevent a yarn mix, check the merge number on the outside of the case to be sure that it is correct before any yarn is removed. Also, check labels of all tubes in a layer before removal to be certain color pattern is same for each. Do not place together open cases that contain different deniers and merge numbers.

Creeling. Use caution in creeling to prevent bruising of the yarn cake. Do not creel damaged yarn; instead, hold it for stripping.

1

REMOVE OUTSIDE ENVELOPE by placing both hands on sides of envelope and raising it vertically.

2

FOR EASY REMOVAL of tubes, pull back door on inner part of case and clip against edge of case.

Photos courtesy E. I. du Pont de Nemours & Co., Inc.

3

REMOVING TUBES FROM CASE. Place fingers inside a tube core with thumb on top of yarn layer. Avoid contact with sides of yarn on tube. Don't remove tubes from case until you are ready to use them; then remove only the number required at the time.

4

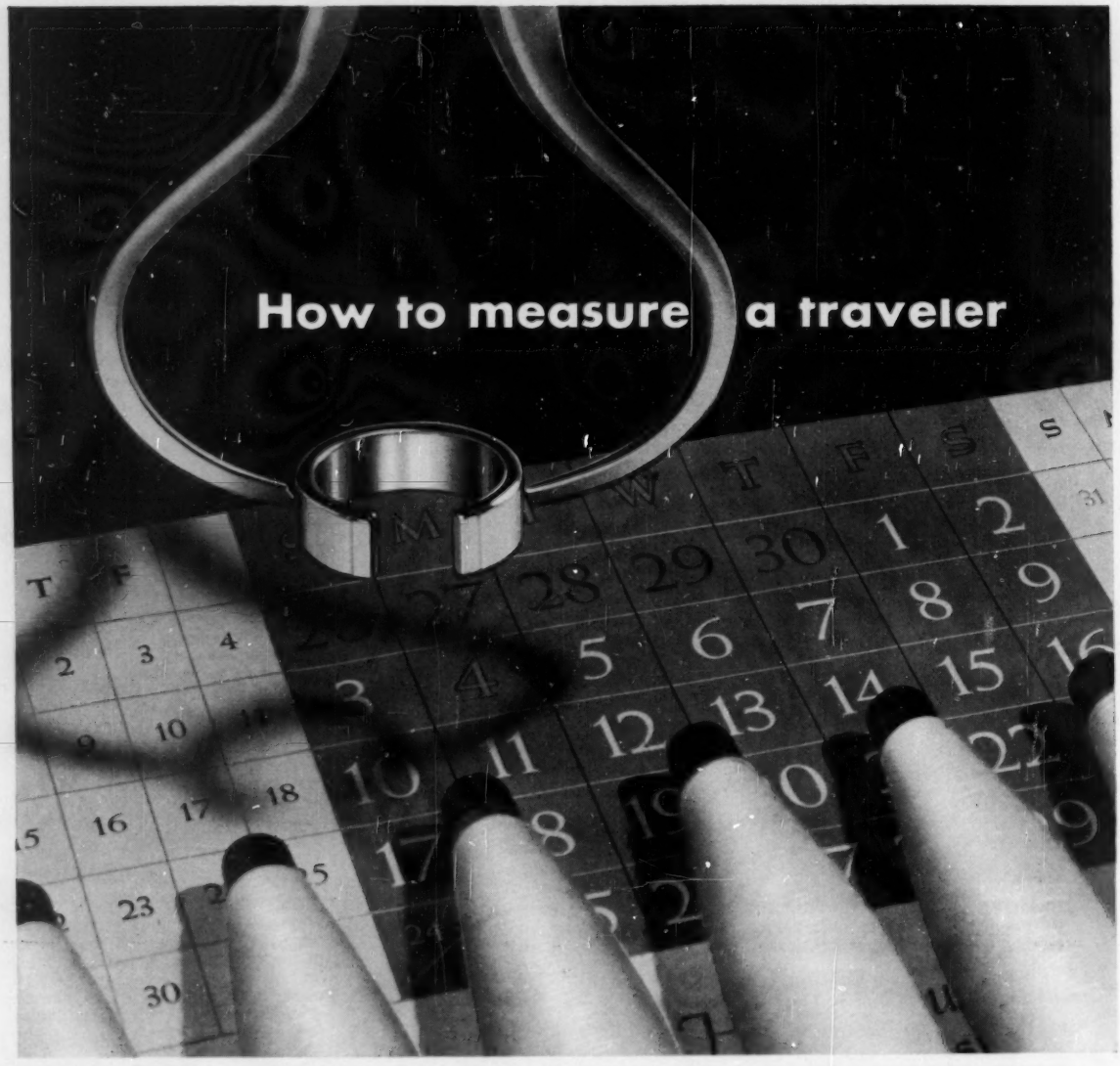
REMOVE CELLOPHANE that is tucked in both ends of tube, alternately holding the package in the left and then in the right hand or vice versa, with fingers inside the tube core, thumb out.

5

UNWIND THE WRAPPER; do not drag it over layers of yarn.

6

UPRIGHT BUGGY with horizontal pegs is recommended for transporting tubes from case to twisters for throwing. Handle tubes with fingers inside core, thumb outside, avoiding contact with sides of yarn on a tube.



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Automation: Who's Afraid of the Big Bad Wolf?

BY RINGGOLD ARDEN

EXCLUSIVE

A FEW years ago somebody came up with the word "Automation"—a new word for an old thing—and a great deal of alarm has been created by the very general belief that this is some new threat to the livelihood of the American working man and woman. About 25 years ago, the bugaboo was "technological unemployment," which was the same thing.

Automation probably came into being with the invention of the spinning frame by Arkwright nearly 200 years ago. There may have been some faint movements in this direction at an earlier date, but certainly the spinning frame marks the first important step into an era, the slogan of which has been, "Do it with Machinery." This first feeble effort at automation probably created more panic among working people than could possibly be generated today by even the most aggressive campaign against this supposed bugaboo.

The news that one girl with a piece of machinery could spin as much yarn as 16 girls could previously produce, struck terror into the hearts of people who had eked out a wretched living spinning and selling yarn. Those simple souls had never heard of an expanding market. The market was a fixed thing. There was demand for just so much yarn, and if one girl could do the job that normally required 16, then by irrefutable logic, 15 spinners would have no alternative but to starve. It is rather remarkable that after more than 150 years of experience to the contrary, this same idea so imperishably persists.

The textile industry offers the most outstanding and spectacular example of automation yet presented, and did most of it over 75 years ago, before most of our large modern industries were even conceived. The crude little spinning frame which frightened the hand spinners around 1770 was constantly improved until one girl could do the work of six or seven thousand girls with spinning wheels.

A hand carder could produce a few ounces of well-carded wool in an hour. The mechanical card could produce around 75 to 100 pounds of better carded wool in the same time. There have been great strides in the improvement of textile machinery during the last 75 years, and the textile industry has reason to be proud of its accomplishments, but these strides have been as nothing compared with what was accomplished in the first 100 years of the automation of textile processes.

Far from producing the feared calamities, this automation of textiles produced undreamed of wealth, and by liberating millions of people from the infinite drudgery of spinning and weaving at home, made available workmen later needed in other industries. No matter what further progress the textile industry makes, it must always be insignificant as compared with what it has made.

Not only did the automation of textile manufacture bring wealth by making textiles cheaper and putting them within the reach of a greater number of persons, and therefore creating a demand for infinitely more textile products than had ever been salable before, but this automation created demands for many entirely new things.

As the degree of automation increased, the demand for all kinds of auxiliary equipment likewise increased. It has always been this way, since the first beginnings of the Machine Age. Complexity leads to more complexity, and new businesses and sometimes whole new industries sometimes spring up to minister to the needs of automation in another industry.

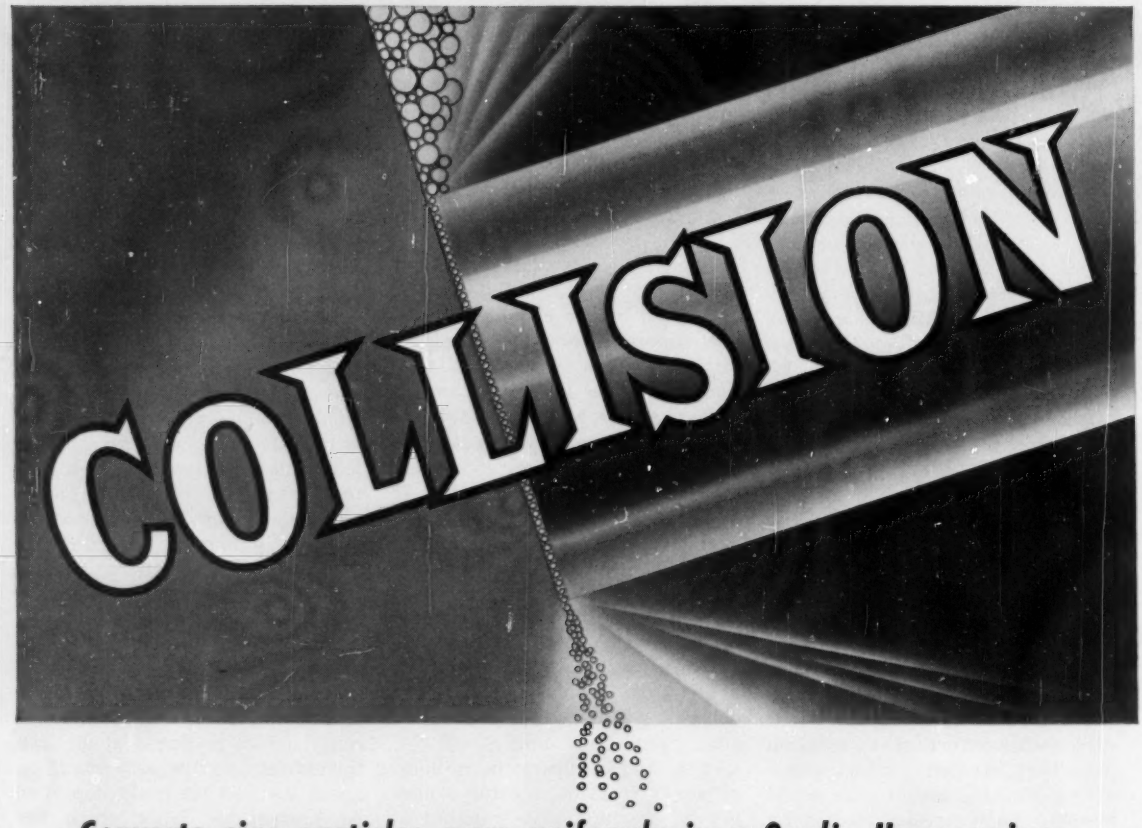
The most elementary need of the new Machine Age 175 years ago was for power to drive the machines. A catalog of all of the things that sprang from this demand for power would be bigger than an unabridged dictionary, and not one of them existed or had even been thought of in 1770.

Some years ago, when the Bell Telephone System adopted a policy of automation of its system, there was great apprehension about what would happen to several hundred thousand girls who worked as telephone operators. The Bell System is almost completely automatic today, and is now actually planning automatic long distance service, yet we understand that it employs more people than ever before in its history.

Think how many things would be impossible today without automation. Your daily newspaper, that miracle of mechanization, could not be produced at all, and the old-fashioned weekly would be about the best we could hope for. At present-day labor costs, the subscription to such a paper produced by the old-fashioned methods would be at least $200 a year, or perhaps as much as $500. It is hard even to guess at what it would cost to get out a 60-page newspaper with wood cuts and hand-set type, on an old Washington Press, and have two or three hundred thousand copies run off.

The automobile is another splendid example of what automation can accomplish. 50 years ago an automobile mechanic made about 25 cents an hour, and a reasonably good automobile cost about $4000. When Henry Ford raised wages from 25 cents an hour to 50 cents, this was one of the most exciting news stories in many years. When other automobile companies paying 25 cents an hour were going broke trying to make automobiles by the old-fashioned methods, the fact that one manufacturer using different methods could pay twice the wages and still make a profit, was the biggest news in many a day. The automobile industry, which was nothing 60 years ago, is now the biggest single economic

(Continued on page 165)



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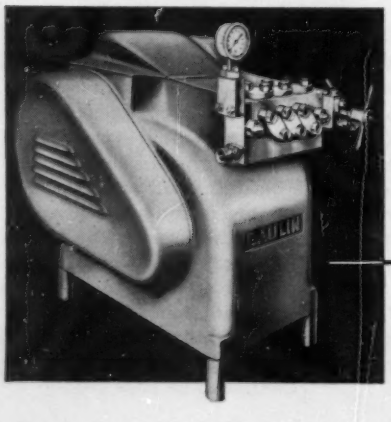

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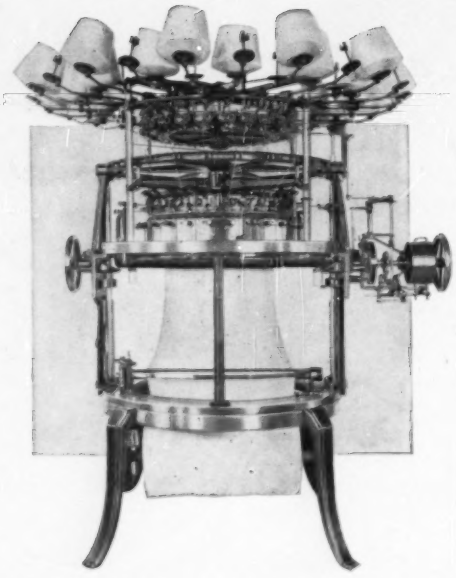

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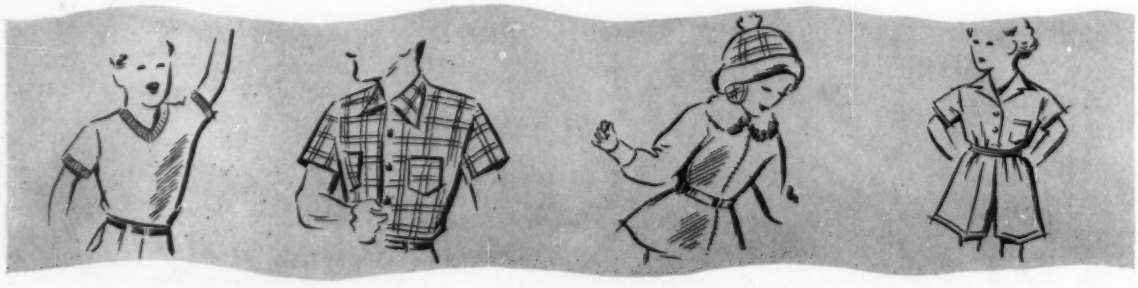
Orlon and other synthetics — by themselves or in combination with natural fibers — are knit to look their best on this highly versatile and productive machine. The increasing demand for more and more varieties of knit sweaters, sport shirts, gloves, underwear and dress fabrics will keep your Wildman Interlocking Machines profitably busy for years to come — especially when you compare their output with production and operating costs!

Available in all popular sizes from 10″ to 30″ and furnished in all cuts — 10 to 24 needles per inch. Belt or individual motor drive. Inquire today for complete information.



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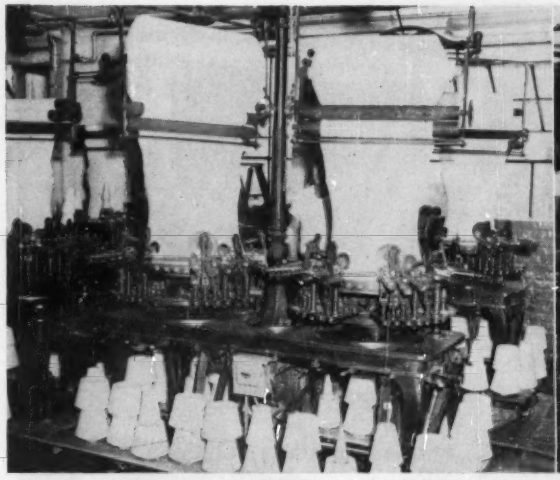
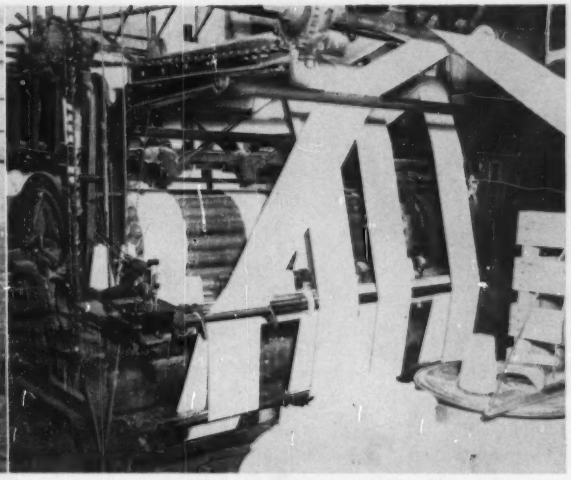


SPRING NEEDLE MACHINES provide a wide range of fabrics for economical production. Latch needle machines make trim fabrics.



FABRICS ARE BRUSHED OR NAPPED, depending upon end use. When appropriate yarns are used, it minimizes passes required on nappers.

Versatility: Keystone to a Successful Knitting Operation

STAFF PREPARED

EXCLUSIVE

A COMBINATION of equipment to meet varying requirements and a good reliable labor force trained to be versatile in mill operations provide important contributions to the flexibility which is the keystone to successful operations at Pannill Knitting Co. Martinsville, Va., according to W G. Pannill, vice-president of the company.

Spring Needle Machines. This mill uses spring needle machines as well as latch needle body knitting machines to provide the variety required in outerwear and underwear fabrics. The spring needle machines are used primarily for outerwear fabrics, and this mill produces garments in the economy field with conservative styling by finding more ways to make well styled garments at lower cost on a large volume basis. According to management here, spring needle machines can make almost any pattern demanded for outerwear fabrics. The latch needle machines are used primarily to make trim fabrics, such as collars and cuffs, as well as ribbed underwear fabrics.

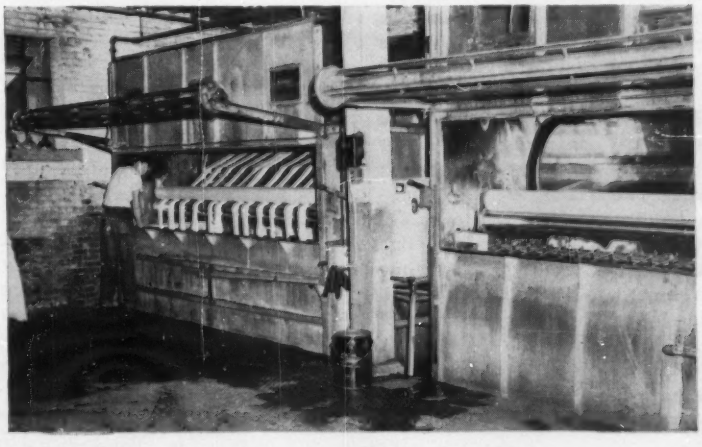
An abundance of floor space also proves most helpful, in that there is no shortage of space for storage of goods in process. Although this mill is not "streamlined," changes from one style or pattern to another do not slow production appreciably.

Never at Capacity. Even at high production, all machines are not running in this mill. Most machines are kept in place and used on demand when styles and orders require fabrics the different machines can produce.

When a style "dies" or becomes dormant on the market, the machines used to make it are not sold or scrapped; instead, they are merely held idle until the same style or something similar returns to the market, sometimes two years later.

Machines for Every Job. "Be prepared to make whatever kind of goods is demanded by the current market without delay" is part of

TWO SEPARATE DYE HOUSES are operated within the mill; one for light colors; one for dark. This reduces danger of light and dark batches contaminating one another.



SEWING FACILITIES round out the completely integrated plant. Operatives are versatile and experienced, may easily change from one operation to another.

FINISHED GARMENTS are neatly pressed, ready for packaging and shipment. Operatives here are also qualified to perform whatever operation has priority.

management's philosophy at Pannill. This plant has been in operation for about 30 years and has acquired equipment to do about every operation that may be found in most popular styles during that time.

For example, grommet tie collars on knitted sport shirts were once in vogue, then went out. Now they're coming back, and this mill has the equipment to apply grommets; the machine has been idle and in storage.

Some fabrics are napped in this mill; others are brushed on D&F single action nappers. Use of appropriate yarns, with specifications tailored for the application, minimizes the number of passes required on nappers and brushers

Two Dye Houses. Two dye houses are maintained; one for light shades, another for dark shades. These facilities help simplify quality control. Delays are minimized in changing from one color to another in that less time is required to flush the dye machines. This prevents spoilage of goods by contact while wet; dark goods would tend to spot or darken lighter shades.

Adapting styles for economical production is easy for this mill. For example, an outerwear jacket made with a wide stripe pattern knitted collar and cuffs may be made more economically by using a narrow stripe pattern in the collar and cuff material of the same width, because alignment of the stripes is not critical as with the wide stripe material.

Machine operatives are versatile in that they may easily switch

What to Expect Under the New

BY J. M. RAMSAY, JR.*
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Waldensian Hosiery Mills
Valdese, N. C.

ABSTRACT

WHAT I HAVE to say pertains primarily to the seamless end of the hosiery industry, rather than to full-fashioned, as most of the full-fashioned mills are well above the $1.00 minimum.

In 1949, when the minimum wage was raised to $.75 per hour, few people in seamless hosiery mills were earning less than that minimum. According to a survey made at that time, the average rate was $.90 per hour. Today an entirely different situation exists.

In looking over the average hourly earnings from a large number of seamless hosiery manufacturers, it is evident that the majority of employees are earning close to the new minimum wage. The national average shows a range of from $.97 for loopers to $1.18 for knitters. This means that most of our people are earning right around the $1.00 minimum.

I think we can assume that these people are working at a fairly high production level. I know that our own employees are working at a high level. Therefore, we cannot expect these people to continue at that high level of work when they are so close to the minimum wage. The incentive to work would be taken away if there is not a sufficient spread between the mini-

*Highlights of an address before the Southern Hosiery Manufacturers' Association.

from one priority operation to another. For example, sewing machine operatives may switch from cuffs one week to pockets the next week, etc.

The principal machinery used in this completely integrated plant is as follows:

- 110 Scott and Williams latch needle machines
- 20 Wildman latch needle machines
- 144 Tompkins spring needle machines

Dye house equipment:

- 5 enclosed stainless steel Rodney Hunt dye tubs
- 4 Tolhurst extractors
- 2 dryers
- 4 D&F nappers

Sewing room:

- 110 flatlock machines
- 115 Singer and Merrow overedgers
- 50 other sewing machines of various types

The plant occupies a generous 275,000 square feet of floor space, yarn counts range from 6s to 30s, and production of knit goods is approximately 75,000 pounds weekly. Carded cotton yarn is used primarily; however, rayon, nylon, and cotton blends are also used.

Minimum Wage

mum wage and top earnings.

I hope that no one here plans just to supplement up to the $1.00 minimum, because when this happens you will find larger and larger supplements necessary each week, since employees will not produce if their premium pay is close to the $1.00 minimum.

In 1949, when the $.75 minimum rate went into effect, we all raised our lower paid operatives and did nothing for the higher skilled jobs. This has caused the earnings of our skilled levels to come closer together. We should definitely raise a percentage across the board rather than raise our lower skilled jobs up to the higher skilled jobs.

I would like to point out what items will be affected by the minimum wage. According to our yarn suppliers, their increased cost of manufacturing on cotton yarns will be 7%. There has not been any increase indicated in synthetic yarns or from our throwsters.

Grey labor cost (including direct and indirect), according to the statistics that I have compiled and the average hourly earnings throughout the industry today, should be increased by 12% in order to give our employees something to work for.

An item about which I am not sure is needle cost. With the increased cost of steel, I think we will have an increase in needle cost soon. Therefore, I suggest that you increase this by 10%. This is a small item, but all of these increases soon add up to something sizable.

Our next item is finish labor, and of course the same thing applies here as in grey labor—it should be increased by 12% in order to give our employees what is due them.

The next item of cost is packing material. If your business is anything like ours, I am sure that your packing cost has increased without an increase in the minimum wage. When you put inserts in all the socks, and dress them up so you can hardly see the socks, you have really put on a lot of packing from the standpoint of dollars and cents. According to our box manufacturers and paper suppliers, this cost should be increased by 7%. This is simply an average, some say 5%, some say 15%, but the consensus appears to be that it should not go over 7%.

All I have done is point out to you where your cost will increase and approximately what your percentage of increase will be. Those of you in the full-fashioned industry can use this same cost setup by just disregarding the increases in labor cost.

Now, of course, the increased cost per dozen will depend on the type construction and style that you are producing. You can simply take these figures and apply them to your present cost. We are in a competitive business and I am sure that none of us will be able to absorb this additional expense.

Mr. Ramsey of Waldensian

Therefore, let's add it to our prices and tell our customers that it is what we must have.

I am sure we all realize that the minimum wage is becoming effective at a bad time from the standpoint of spring sales planning. We all know that March, April, and May are slow months in the hosiery industry; therefore, we should be planning now to get our prices up in anticipation of this spring business. Since we book business for spring months ahead, we should take the new cost into consideration now; goods will be shipped after March 1 at a higher cost.

Let's not wait until March 1 to raise our prices. If we do, we will be staring slow business in the face, and will be afraid to pass on increases which might scare away what little business we have at that time. It behooves us all to increase our prices, let the chips fall where they may, and get out and sell hosiery instead of giving it away.

To summarize: You can expect the following cost increases as a result of the new minimum wage law—yarns, 7%; labor, grey and finished, 12%; needles, 10%; boxes and papers, 7%.

New Equipment

and materials for the knitting industry are announced in the "New Equipment Parade" section which begins on page 175.

This Mill Streamlined Handling of Full-Fashioned Hosiery

BY SAM BOYER
EXCLUSIVE

A MODERN, streamlined system of handling full-fashioned hosiery has been developed by our mill; the system is simple, labor-saving, low in cost, and is the result of careful study of the various methods of handling used by several leading southern hosiery mills.

By use of this simplified system, it is estimated that actual handling of the stockings has been reduced by 50%, with a corresponding cut in handling cost. It has also greatly contributed to improving first quality percentages in both grey and finished hosiery, because it eliminates many picks and pull-threads which would otherwise be caused by such handling, and which would result in a subquality product.

Our method of handling hosiery includes many advanced features that eliminate possible bottlenecks to the smooth flow of goods in process. These features include:

Hosiery support rods.

Portable support rod carriers.

Hosiery support rod stands, at seamers.

Magazine trays, for holding seamed stockings.

Stainless steel chutes, for seamer's work.

Automatic inspection machines, with auxiliary tray stands.

Pin-rack classification stands.

Master work tickets, colored to identify hosiery lot sizes.

Colored rubber bands, to mark dye-net sizes.

Production rating charts showing quantity and quality.

Hosiery Support Rods and Carriers. Beginning in the knitting department, the knitter loops a string around the welt of each dozen when it is knitted, and then hangs it on the bar of his cabinet until the end of the shift. The hooked end of the hosiery support rod is inserted through the looped strings of each dozen, as shown in **Photo No. 1.**

Next, the master work ticket is attached to the front end of the rod, and the entire eight hours production of each knitter is taken to the nearby portable support rod carrier or truck; here the rod is inserted in holes drilled in the top rail of the carrier. The knitter wears gloves to remove the stockings from the machines, and also wears them to make the stockings into bundles of a dozen pairs each, to prevent picks.

The rods are mill-made of ½″ cold rolled steel, 5′ long before bending to shape. The horizontal top piece is 30″ long, downward bend is 6″, return bend which actually supports the goods is 24″ long, having about 2″ bent upward to prevent the dozens from sliding off the end, unless desired by the seamer.

The portable support rod carrier, loaded with hosiery, is next rolled into a Lydon steam box where the goods are preset at a dry-bulb temperature of 208 F and a wet-bulb of 190 F, for a period of 55 minutes with 5 minutes drying time.

The portable support rod carriers are constructed of angle iron ⅛″ x ¾″ x ¾″; the frames are 5′ long, 5′ high, and 2′ wide. The top rails are matched with 16 holes each, equally spaced to receive the hosiery support rods. The ends are covered with a heavy cloth to protect the stockings from coming in contact with the angle-iron uprights. **Photo No. 2** shows the load of stockings inside the steam box, before closing the doors and starting the steaming cycle.

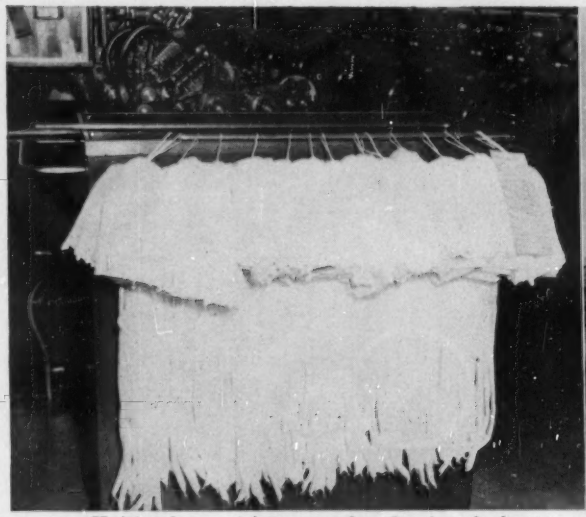
Seaming. The portable hosiery support rod carriers are taken from the steam box and rolled into the seaming department, where they are aligned in the service aisles between the rows of seaming tables. The seamers are in rows of twelve each, spaced about twenty feet between rows, and working back-to-back. The loads of hosiery to be seamed are thus placed between two rows of seamers, as shown in **Photo No. 3.**

Truck loads of empty magazine trays are placed at each end of the service aisle. The seamer gets the work to be seamed from the carrier, and also gets an empty magazine tray from the nearby truck when she has need of it. Most operators welcome the opportunity to arise from their chairs after seaming 10 to 15 dozens, and getting their own work from the carrier affords them some relaxation that does not interfere with their daily production. In proof of this statement, we have a good percentage of our operators averaging better than 50 dozens daily; they are also staying far within the limits on reseams set by our quality control system.

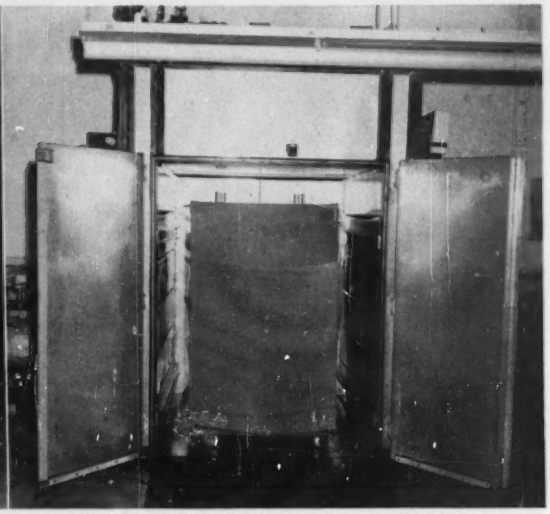
The solid line tables have been modernized by being broken into 42″ individual tables, having 14″ spaces between each section. This allows working space for rod holders to be attached to the table top on the seamer's right. The rod holders are made of ½″ galvanized pipe, 22″ high, attached to the table by a pipe flange; a 90° elbow and a 6″ length of pipe afford means of holding the hosiery support rods loaded with hosiery to be seamed. **Photo No. 4** clearly illustrates the compact arrangement.

After each lot has been seamed and the magazine trays filled, they are pushed aside into the service aisle in back of the seamers, where they are taken at a convenient time by an attendant to the inspection line. The empty rod is returned to the carrier by the seamer as she arises to get another lot of hosiery to be seamed.

Photo No. 5 illustrates the manner in which seamer chutes guide the stocking into the magazine tray as it is being seamed. The chutes are made of stainless steel to prevent picks and pulls in the fine denier nylon. The seamer removes one or two dozens from the rod hanging in the holder on her



1 Knitter loops string around welt of each dozen of hosiery, hangs it on bar of his cabinet. Master work ticket is attached to front end of rod (at right).



2 Portable support rod carrier, loaded with hosiery, is rolled to steam box; goods are preset at 208 F dry bulb, 190 F wet bulb for one hour (including drying).

3 After steaming, the hosiery, still on the support rod carriers, is taken to seaming department and aligned in the service aisles between the rows of seaming tables.

4 Solid-line seaming tables have been modernized by breaking into individual 42" tables, with 14" spaces between sections. Rod holders are attached to the table tops.

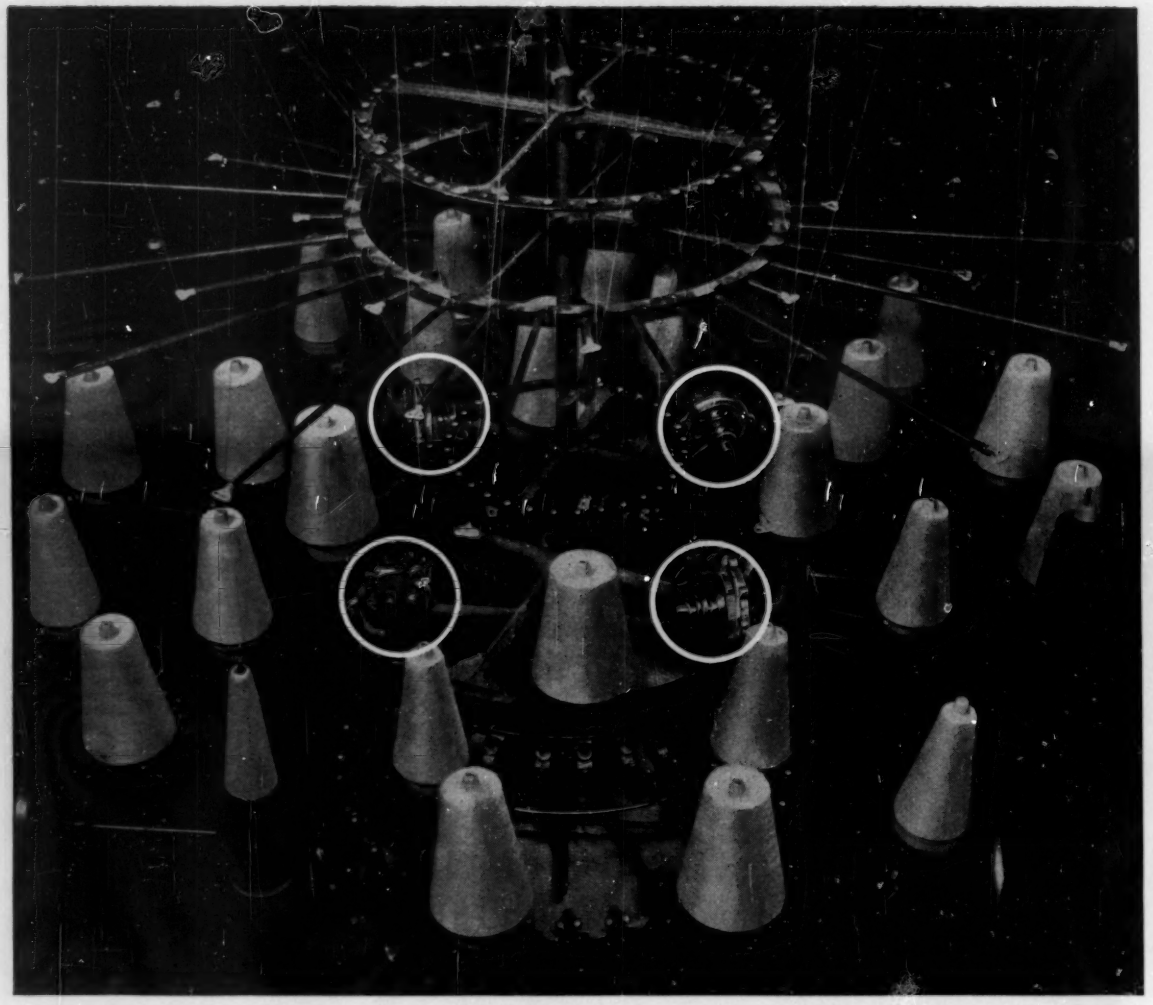
5 Stainless steel chutes guide stocking into magazine tray.

6 Toes point to left for rapid loading of fabric uncurler.

7 Magazine tray is at seamer's left, with one end elevated.

right, slips off the looped strings from around the dozen, then lays it in the trough attached to the seaming table in front of her. The toes point to the left to facilitate rapid loading of the fabric uncurler before seaming.

The seamer chute will guide the stocking toe into the tray in the correct position, provided that the magazine tray is placed properly in relation to the chute, as shown in **Photo No. 6.** In this manner, each stocking is laid very lightly on top of the preceding stocking,



How rubber yarn is tension-controlled at the Steven Knitting Mills

The Steven Knitting Mills, Inc., of 564 Broadway, New York City, are manufacturers of elastic cloth for outerwear, and they control tension of rubber yarns on their various types of circular knitters with Kidde Standard Tension Compensators. Each of the four rubber ends (the dark cones in the picture) feeds into a Kidde Standard Tension Compensator, where tension is controlled *surely* and *accurately*.

By using Kidde Standard Compensators as tensioning devices for the rubber ends, Steven Knitting Mills, Inc. report the following:

Fabric width is now consistent, puckers in the cloth due to tension variations in the elastic yarns have been eliminated, and the general appearance of the cloth has been greatly improved.

For tensioning rubber yarns, Kidde Standard Tension Compensators will work well with any type of latch needle machine or spring-beard needle machine. They'll help you turn out a better elastic fabric at *less* cost!

More than 500 leading textile mills have put Kidde Compensators to work solving their tension problems. For more information on how Kidde Compensators can help *you*, write Kidde today.

Kidde (K Kidde)

The word 'Kidde' and the Kidde seal are trademarks of Walter Kidde & Company, Inc.

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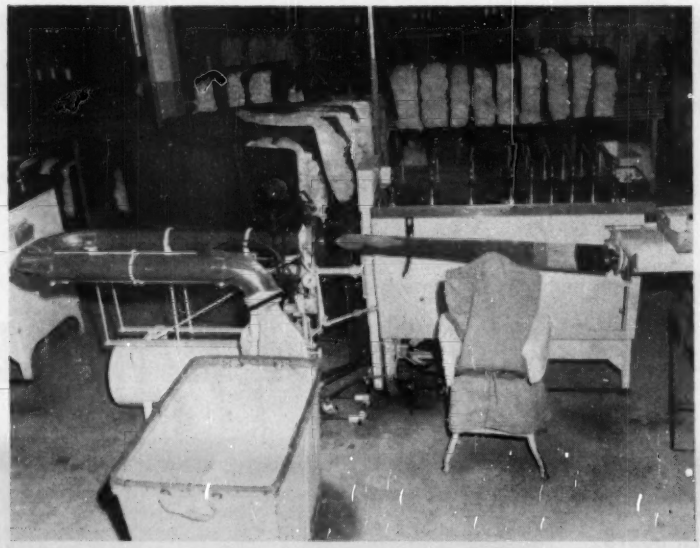
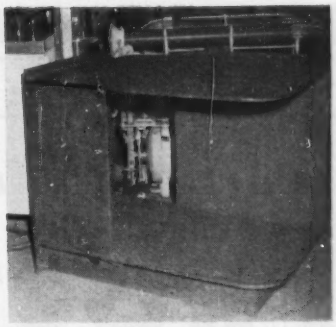


8 Ammon inspecting machines are used; photo shows machine and turner-blower for bagging the stockings.



9 Mill-made tray platform for Ammon machine permits inspector to be supplied with ten trays of hosiery at a time.

which is a great aid to the inspectors in withdrawing them for inspection.

In **Photo No. 7** the seamed stocking has been cut loose with the left hand, and without looking, the seamer allows the welt to drop straight down in the tray without taking her eyes away from seaming the next stocking foot. Note that when the tray is placed in the proper position and correctly elevated, the seamer does not need to twist her body to place the welts in an orderly position in the tray. In addition to eliminating discomfort to the seamer, properly positioned trays make correct placing of the stockings automatic, thereby greatly benefiting the inspector in handling the work.*

Inspection. After the stockings have been seamed, they are taken by an attendant to an inspection line or department separated from the seamers. Here there is no noise to distract the inspectors from their important function, and the arrangement is far superior and more practical than other systems previously used.

We use Ammon automatic inspecting machines. They are capable of producing 220 to 240 dozens daily in eight hours per operator. **Photo No. 8** shows the inspecting machine and the turner-blower for bagging the stockings. Three dozens are placed in a bag preparatory to being processed by the Dunn system, whereby preboarding is eliminated and finish boarding is done on the preboarders.

After the stockings are bagged and automatically counted at the same time, an identification tag is placed on each bag or dye-net. It is held in place by a broad rubber band that is colored differently for each size, making size identification positive at a glance.

The tray platform on the Ammon inspecting machines holds only two trays at a time. However, we have designed an auxiliary tray stand that eliminates extra handling of the trays. It holds an additional eight trays, so that it is possible to supply the inspector with 10 trays of hosiery as they are taken from the seaming line. This supplies the operator with approximately four hours of work, thereby eliminating any further attendance for that period of time.

Photo No. 9 shows the auxiliary tray platform in position at the inspecting machine. Trays have been removed in order to show the stand clearly.

Photo No. 10 shows ten trays of hosiery to be inspected, in position for processing; two trays are on the machine tray platform, and eight trays are on the auxiliary tray stand.

The important feature of pin-rack classification stands and their application is clearly illustrated in the photo. The classification stands are located in a line in back of the line of inspection machines, which eliminates extra walking for the inspectors when they are placing odd stockings in the racks.

In practical operation, all inspected first quality stockings are blown into a dye-net for further processing. Subquality stockings, such as menders, seconds, knitter charges, and any surplus first quality stockings above those needed to complete a three-dozen lot, are placed on the classification stands by the inspector. The reseams are placed on a portable stand in a central location, and at a given time are wheeled to the seaming lines for repairing.

Each seamer operator takes her work from the stand, and after reseaming it, places it back on the portable stand. The system works so smoothly that the operator who formerly checked the odd surplus stockings has been eliminated.

Classification Stands. We have greatly improved the original model of pin-rack classification stands which accommodated only two styles or classifications. [See TEXTILE INDUSTRIES for February, 1950,

*Illustrations 5, 6, and 7 are an important part of the handling system, and are an improvement over the method of placing the seamed stockings in the magazine tray as described in "Training Seamer Operators," which appeared on pages 135-146 of the April, 1953, issue of TEXTILE INDUSTRIES. In the above system, the hosiery support rod and holder are on the seamer's right instead of the left as described in the training article.

Here is PROOF of extra PROFITS

available for you in TUBULAR KNIT with a PROCTOR CONTINUOUS BLEACH RANGE

featuring

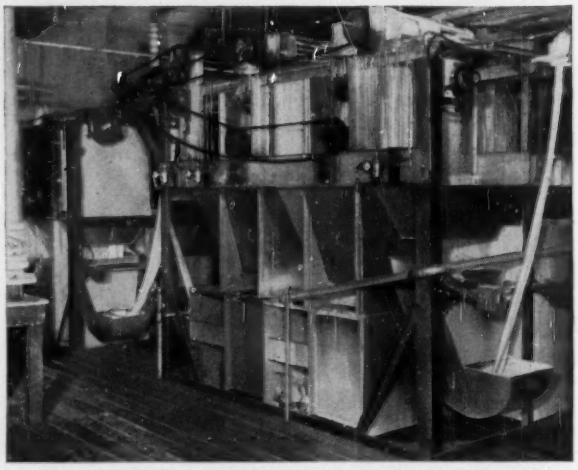
- ★ CONSISTENT QUALITY
- ★ ELIMINATES RERUNS
- ★ REDUCED LABOR, CHEMICAL, AND WATER COSTS
- ★ SIMPLIFIED OPERATION

A recent Proctor Continuous Bleach installation, producing 1300 to 1500 lbs. per hour, offers definite proof of greater yields of top quality tubular knit produced at drastically reduced costs.

SORTING ELIMINATED Not only does the Proctor Continuous Bleach Range feature simplified operation with less labor, but the consistent quality, regardless of styles or weight of cloth being processed, eliminates cutting room sorting—assures matched garments and speeds cutting schedules.

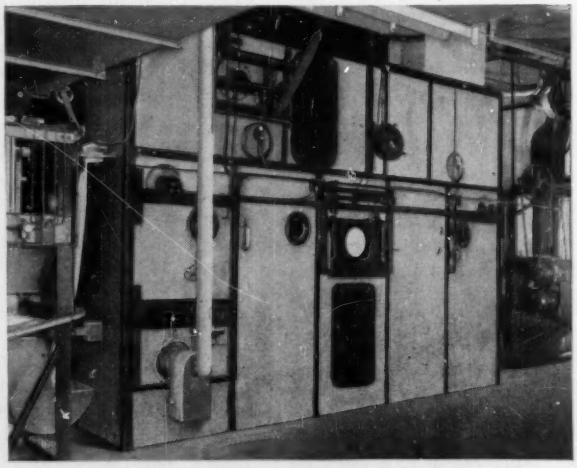
CAN APPLY FLUORESCENT DYE In addition to conducting the cloth, without tension, through washing, saturating, steaming, and white washing stages, your Proctor range can be adapted to apply fluorescent dyes with high efficiency and low chemical and water costs.

PAYS FOR ITSELF IN THREE YEARS The Continuous Bleach Range is a result of years of intensive study by Proctor engineers. The result is tubular knit with minimum shrinkage produced at lowest cost per yard. Most ranges pay for themselves out of extra profits in a few years. Since savings will vary from mill to mill, a Proctor engineer will be glad to visit your plant in order to analyze your particular case. Write or phone today!



ABOVE: Installation View of Con-o-matic Washer in Continuous Bleach Range.

BELOW: Installation View of Steamer Unit in Continuous Bleach Range.



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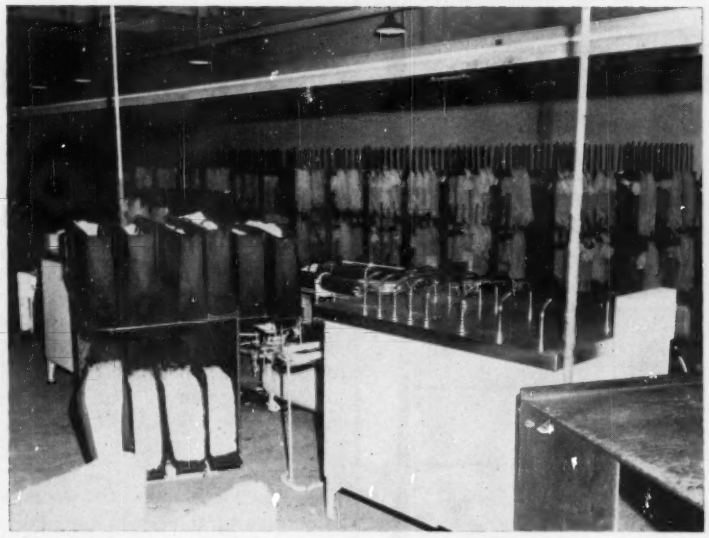
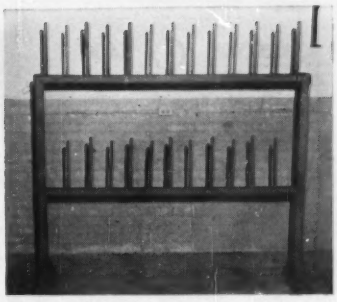


10 Ten trays are shown in position for processing — two trays on machine tray platform and eight trays on auxiliary tray stand.



11 Newly designed pin-rack classification stand has twelve separations on each rail, makes it possible to accommodate four classifications of hosiery from size 8½ through 11.

pages 145 and 147.] As shown in **Photo No. 11,** the stands now have twelve separations on each rail; this arrangement makes it possible to accommodate four classifications of hosiery from size 8½ through 11.

Stands are constructed of 2″ x 2″ pine lumber and are bolted together. They are 5′ high, 6′ long, and 28″ between rails; pegs are 12″ long, and are made of ½″ maple, with spacing as shown in the photo. Center pegs for dividing style classification are marked with white adhesive tape. The entire stands are covered with beaver-suede cloth. Present cost of construction is about $15 complete.

Unnecessary handling of the stockings is further eliminated by having the inspector erase all small picks and pull-threads while she has the stocking on the inspection form. We use a soft Rub-Clean Eraser No. 2002, which is shown in use in **Photo No. 12.** A time study proved that an inspector can erase a small defect as quickly as she can remove the defective stocking and place it on top of her machine for the mending operation; therefore erasing picks and pulls not only saves extra handling, but it also saves the unnecessary mending costs.

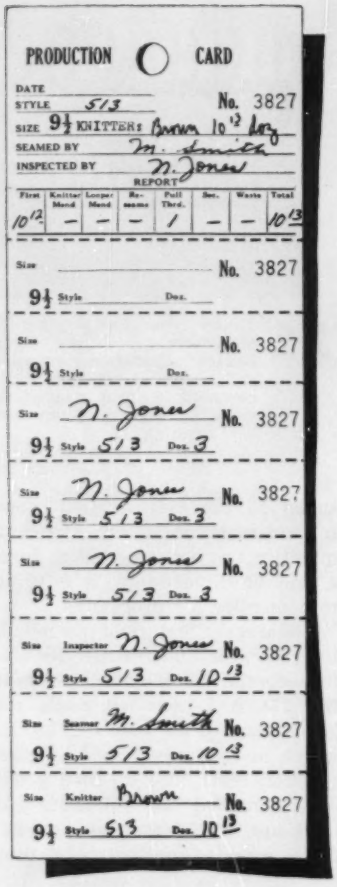
However, not all picks and pull-threads can be erased, so they are taken to the classification stand for accumulation. After a sufficient quantity has accumulated to form a unit of three dozen, it is given to a mender for processing.

The unique feature of our mending system is that the mender also inspects the mended hosiery (**Photo No. 13**), and does not route the goods back to the inspector again, which merely serves to double inspection costs. The mended goods are identified as "Menders" if latch-ups, but if they are "picks" to be machine-mended only, they are passed as first quality. The important feature is that all mended goods are sent directly to storage for dyeing or processing. This saves back-track handling as well as the cost of reinspection.

The inspector fills in the quantity and style as the tray lot is finished. The reseams are taken to seamers, knitter charges to knit-

12 Inspector erases all small picks and pull-threads while the stocking is on the inspection form.

13 Mender also inspects mended hosiery; goods go directly to storage instead of to reinspection.


PRODUCTION CARD

DATE

STYLE 513 No. 3827

SIZE 9½ KNITTER: Brown 10 12 Doz

SEAMED BY M. Smith

INSPECTED BY M. Jones

REPORT

First	Knitter Mend	Looper Mend	Re-seams	Full Thrd.	Sec.	Waste	Total
10 12	—	—	—	1	—	—	10 13

Size ____ No. 3827
9½ Style ____ Doz. ____

Size ____ No. 3827
9½ Style ____ Doz. ____

Size M. Jones No. 3827
9½ Style 513 Doz. 3

Size M. Jones No. 3827
9½ Style 513 Doz. 3

Size M. Jones No. 3827
9½ Style 513 Doz. 3

Size Inspector M. Jones No. 3827
9½ Style 513 Doz. 10 13

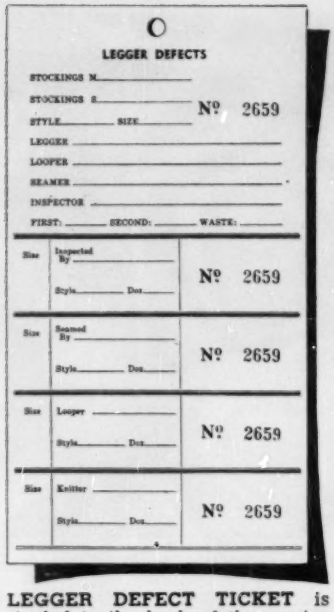
Size Seamer M. Smith No. 3827
9½ Style 513 Doz. 10 13

Size Knitter Brown No. 3827
9½ Style 513 Doz. 10 13

PRODUCTION CARD is the master work ticket, and is attached to support rod by knitter. Inspector fills in "Report" section, which is used for quality control purposes. Top four strips are dye-net identification tickets. Bottom three strips are payroll tickets for knitter, seamer, and inspector.

ters, and the menders are taken to the classification stand for making up into three-dozen lots. When the reseams and knitter charges are reinspected, they are classified as shown on the tickets. The menders handle their tickets in the same manner. In this method, the final percentages of first quality and subquality can be determined on every stocking passing through the entire plant.

With this system of handling full-fashioned hosiery, direct handling costs have been reduced by more than 50%, inspection rates have been reduced by approximately 47% without penalizing anyone's earnings, there has been a vast improvement in first quality percentages, mending has been


LEGGER DEFECTS

STOCKINGS M.

STOCKINGS S. Nº 2659

STYLE SIZE

LEGGER

LOOPER

SEAMER

INSPECTOR

FIRST: SECOND: WASTE:

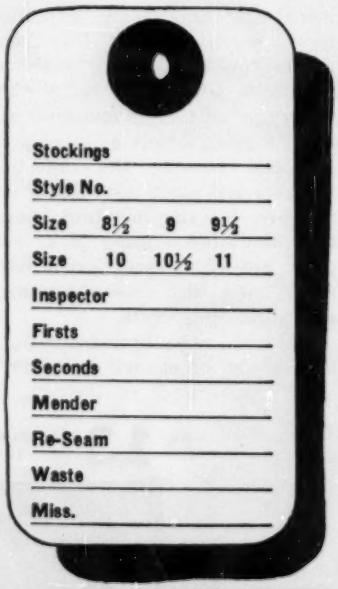
Size Inspected By Style Doz. Nº 2659

Size Seamed By Style Doz. Nº 2659

Size Looper Style Doz. Nº 2659

Size Knitter Style Doz. Nº 2659

LEGGER DEFECT TICKET is stapled to the back of the master ticket for stockings which can be mended. Inspecting forms are not expanded when examining legger defects, to prevent runs. Inspector classifies them as seconds or menders.


Stockings

Style No.

Size 8½ 9 9½

Size 10 10½ 11

Inspector

Firsts

Seconds

Mender

Re-Seam

Waste

Miss.

RESEAM IDENTIFICATION TICKET. Knitter charge and mender identification tickets are the same except for color — reseam ticket is yellow, knitter charge is blue, and mender ticket is pink.

reduced to an absolute minimum, and waste is a small fraction of one per cent. The system also allows a quick inventory of any goods in process in any type of classification.

Quality Purchasing

STAFF PREPARED

EXCLUSIVE

THE NEW PLANT of Union Dye and Finishing Works, Union, S. C., is operated on the basis that unit costs are lower when supplies are secured in large volume. The management at this plant also carefully watches detail costs to assure an economical and quality-conscious job of hosiery finishing.

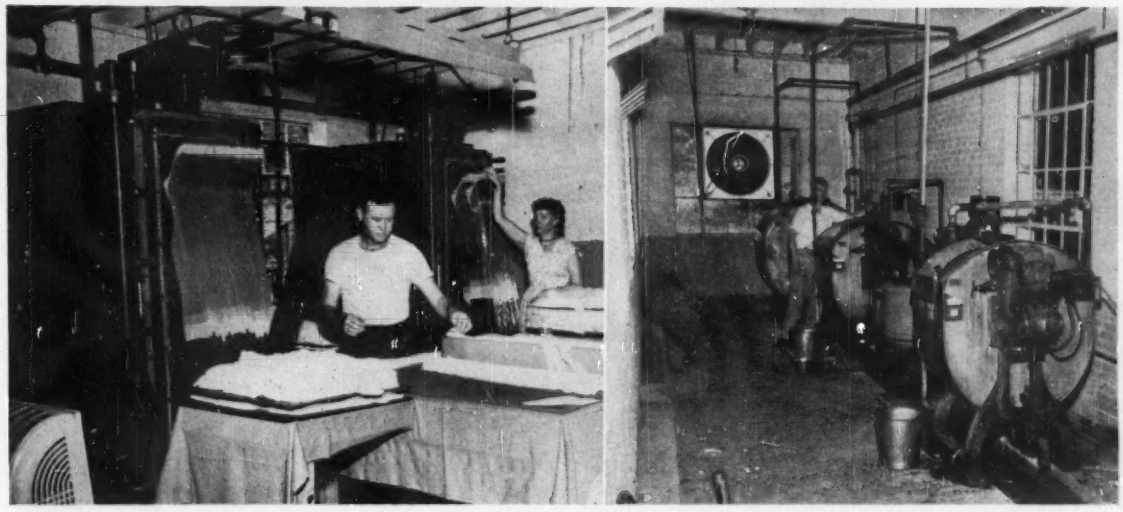
To help in attaining these objectives, all supplies are purchased in large quantities to take advantage of the lower unit costs usually attendant with this method of purchasing. A two-story warehouse adjacent to the main building of the new plant is used to store supplies until needed.

Efficient and experienced operatives are retained to assure low unit cost of handling and processing, and processing operations are combined where practicable.

New Building. This commission hosiery dye and finishing plant was moved into new quarters last July. The new plant is arranged for more efficient operation with plenty of room for expansion in the future. The new brick structure has 12,000 square feet of floor space, and facilities now in opera-

EXTRACTED DYED GOODS are stored in metal cans ready for final boarding. Goods do not stay in cans more than one day.

Saves Money for New Hosiery Finishing Plant



PREBOARDING is first operation (left). Three dozens are put in each bag ready for dyeing. Right: dyeing to customer specifications and to finish desired. Bags are stripped and reused in preboarding department.

tion can handle 6,000 dozen pairs of ladies full-fashioned hose per week. Capacity of facilities planned is 12,000 dozen pairs per week.

Floors of the main building were constructed to carry eight 32-section knitting machines. Facilities are provided for dye house, preboarding and boarding, stamping, folding and pairing, shipping and receiving.

Processing. Processing was planned and organized on the most economical basis compatible with the equipment while maintaining a quality level satisfactory to customers.

Here's how Union operates: When a lot of hosiery is received, the stockings are immediately preboarded and shelved on flat trays; the trays provide flat storage for the stockings and minimize the danger of wrinkled work. The stockings are preboarded in Paramount steam-operated machines. Each customer's goods are processed in a separate batch.

When the dyer gets the stockings they have already been preboarded, and the shape of the stockings has already been set. This procedure gives the most satisfactory work in this plant, although two boarding operations are necessary. The additional expense of the extra boarding operation was considered desirable by management in view of the improved results achieved.

The work is prepared for dyeing by an operative who rolls the hosiery in bundles while it is on the flat trays, to prevent wrinkling and crushing. The stockings are

FINAL BOARDING is done on electrically heated forms to take advantage of favorable power rate.

PAIRING is done by experienced operatives, who also examine and mark menders.

For open-wind packages, any type... the Leesona Roto-Coner®

This popular open-wind machine features versatility, high quality, and low cost production. It offers real opportunities for economy with large package spinning.

Here are some reasons why many leading mills have replaced obsolete winding equipment with Leesona Roto-Coner drum winders:

- The Roto-Coner produces every type of open-wind package. It winds onto paper cones for knitting; wood cones for warping; paper tubes for sales yarn; perforated tubes and springs for dyeing; wood tubes and cones for twisting.
- It winds cotton, spun synthetic staples, wool, worsted, linen and blends. Several counts can be wound simultaneously on the same machine.
- Its Rotary Traverse — an exclusive one-piece combination driving drum and traverse guide — eliminates all moving parts connected with reciprocating guides, and reduces maintenance, assures uniform packages and top quality yarn.
- Users report annual costs for repair parts averaging as low as ¼ of 1% of the original investment.

Roto-Coner Winders are quiet and trouble-free, easy to operate and to maintain. For further facts on how these machines can benefit your own open-wind package operations, write for illustrated booklet.

23.5.16

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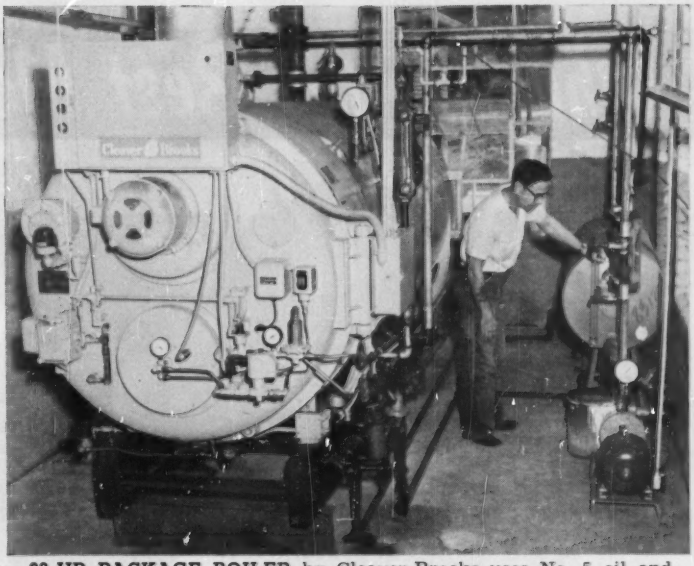
Winding and Twisting Machinery for Natural and Synthetic Yarns

dyed and finished to customer specifications.

Dyed stockings are removed from the dye machines and after extracting are left in the dye bags, which are put into 20-gallon metal containers. Here the stockings are kept covered and damp until final boarding. Electrically heated forms are used to take advantage of the favorable electric power rates in this locality.

2-in-1. From final boarding the hose are taken to the pairing department. The stockings are paired by experienced operatives who mark and remove menders, thereby combining two operations in one. Only experienced operatives perform this job.

After pairing the hose are stamped and then boxed and wrapped to customer specifications, ready for shipping.



80-HP PACKAGE BOILER by Cleaver-Brooks uses No. 5 oil and will pay for itself in two years in oil savings alone as compared to boiler formerly used, which required No. 2 oil. This boiler has fuel preheater and gas pilot; can be converted to natural gas quickly.

Automation

(Continued from page 149)

factor in American life after food and shelter.

We see no reason to be afraid of automation, but should welcome it, and the more the better. It can lead us to new high levels of prosperity, and influence the history of the world. The United States, with only about seven per cent of the world's population, already produces about half of the world's wealth, and we do it by what is now called automation.

With more automation we should be able to produce more wealth, and as other nations learn our methods and apply them, there may be enough prosperity abroad in the world to dispel forever the threat of war. Wars are seldom started by people who know they are going to lose before they start, and certainly no prosperous nation with little to gain by war and much to lose, could likely be stirred to military conquest by even the most rabid demagogue.

It has been our experience at all stages of automation that better trained people are constantly needed in industry, and that better educations will lead to better paying jobs. The kind of intelligence or education which could fill a wheelbarrow with dirt and push it from one place to another is not good enough to enable a man to hold a mechanized job. Our technical schools and colleges are not able to turn out nearly enough graduates to fill the demands of industry for people capable of being trained to meet the exacting requirements of modern science and industry. While many educators contend that the technical training we need to give young people does not turn out well-rounded men, it turns out a big improvement over what the pick and shovel school produced, and perhaps with more automation and more leisure, those persons capable of employing leisure to advantage may develop into well-rounded men.

This is going to be one of the big problems of a more completely automatic age. Leisure time to most people is simply loafing time —a blank period to be filled up at all costs with something inconsequential to do. Just as our present amount of automation has reduced the work week from 70 or 80 hours a week to an average of around 40, further automation can be expected to reduce it somewhat further, although how much it should be reduced is questionable.

With 168 hours in a week, it is obvious that a work week of 84 hours is too much, but by the same token it could be made too little. A capable, energetic, educated person finds loafing one of the most difficult of all kinds of work, and killing time, the most unrewarding of all occupations.

Perhaps some of the biggest industries of the future will be built around recreation. Recreation is a big industry now, and the bigger it gets, the more people will have to work at it, so we will probably ultimately find a balance between the fancied 10-hour week for factory employees and the 84-hour week that some people might have to work to keep these idlers entertained.

At present, only about 25 per cent of the employed people in the United States are engaged in manufacturing, and as factories turn out a more diversified line of complicated gadgetry, it will take more and more people to keep these things in order. Also, the more complicated factories become, the more people they will

(Continued on page 229)

A TRUE STORY — No. 3 of a Series

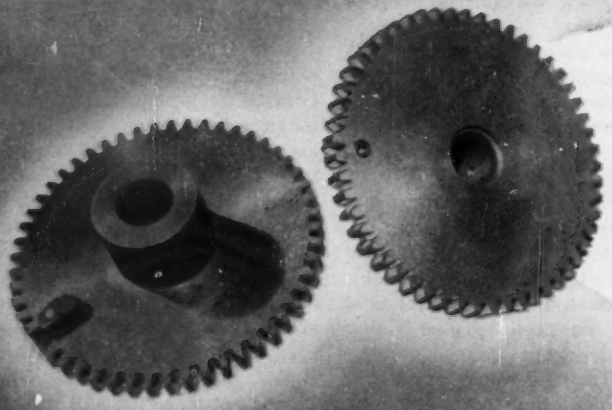
Which is the Best Money Value?

THIS GEAR *is "foundry made."*

- IS INFERIOR IN DESIGN
- ROUGHER IN FINISH
- WILL HAVE A SHORTER LIFE
- IS HIGHER PRICED

"Foundry made" substitute

THESE FACTS TELL YOU WHY THIS SACO-LOWELL GEAR IS YOUR BEST MONEY VALUE:



Genuine Saco-Lowell 53T Knock-Off Gear For 90 Pattern Pickers

1. **THE SMOOTH SURFACE** of the Saco-Lowell 53T Knock-Off Gear for 90 Pattern Pickers attracts less lint and grease over longer periods of time.

2. **THE HUNTING TOOTH** of the Saco-Lowell gear sets in a recess milled in the side of the gear. The shearing action at the knock-off is thus absorbed by the recess and a single tight-fitting cap screw — not just by two rivet-type pins alone as in the foundry gear.

3. **THE HEX SOCKET-HEAD CAP SCREW** of the Saco-Lowell gear is sufficient to take all lateral stresses because the tooth and gear are jig-drilled at the same time. The non-standard hunting tooth will soon loosen.

4. **THE INSIDE SURFACE** of the *foundry-made* hunting tooth is deep cut and appears to have been rough-filed to conform to a larger male hunting tooth, which must also be provided by the foundry — all at extra cost.

5. **AND FINALLY** — The initial cost of the Saco-Lowell 53T Knock-Off Gear for 90 Pattern Pickers is *lower* than the inferior "cost saving" substitute.

CONTINUED EVIDENCE THAT IT PAYS TO USE GENUINE SACO-LOWELL REPAIR PARTS

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HOW OTHER MEN MANAGE

• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •

How to Knit F-F Long-Sleeve Slipovers

EDITOR TEXTILE INDUSTRIES:

The accompanying diagram and description represent instructions for knitting full-fashioned long-sleeve slipovers from 2/29s Orlon at 15 courses per inch.

Key to Numbered Portion of Diagrams

1. Front

I. Set machine for 244-needle start.
II. Knit 14 courses at this width.
III. Widen 7 needles in 11 courses.
IV. Widen 6 needles in 11 courses.
V. Widen 1 needle in 12 courses.
VI. Knit 32 courses at this width.
VII. Narrow 3 needles in 4 courses.
VIII. Narrow 17 needles in 6 courses.
IX. Knit 58 courses at this outer position.
X. Narrow 9 needles in 4 courses.
XI. 80 needles wide.
XII. Knit 4 courses at this width.
XIII. Knit a loose course, then 10 courses straight for raveling.

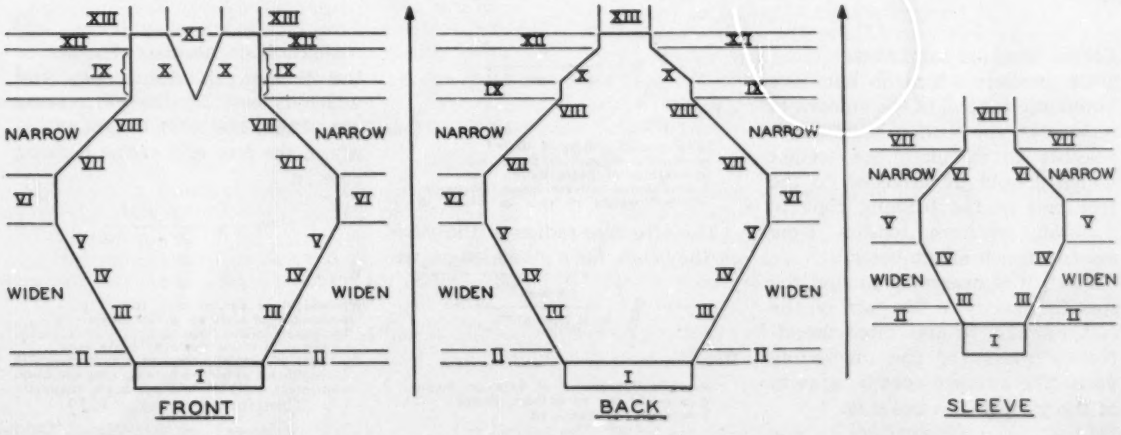
2. Back

I. Set machine for 244-needle start.
II. Knit 14 courses at this width.
III. Widen 7 needles in 11 courses.
IV. Widen 6 needles in 11 courses.
V. Widen 1 needle in 11 courses.
VI. Knit 32 courses at this width.
VII. Narrow 3 needles in 4 courses.
VIII. Narrow 17 needles in 6 courses.
IX. Knit 22 courses at this width.
X. Narrow 13 needles in 3 courses.
XI. Narrow 15 needles in 2 courses.
XII. Knit 4 courses at this width.
XIII. Knit a loose course, then 16 courses straight for raveling.

3. Sleeves

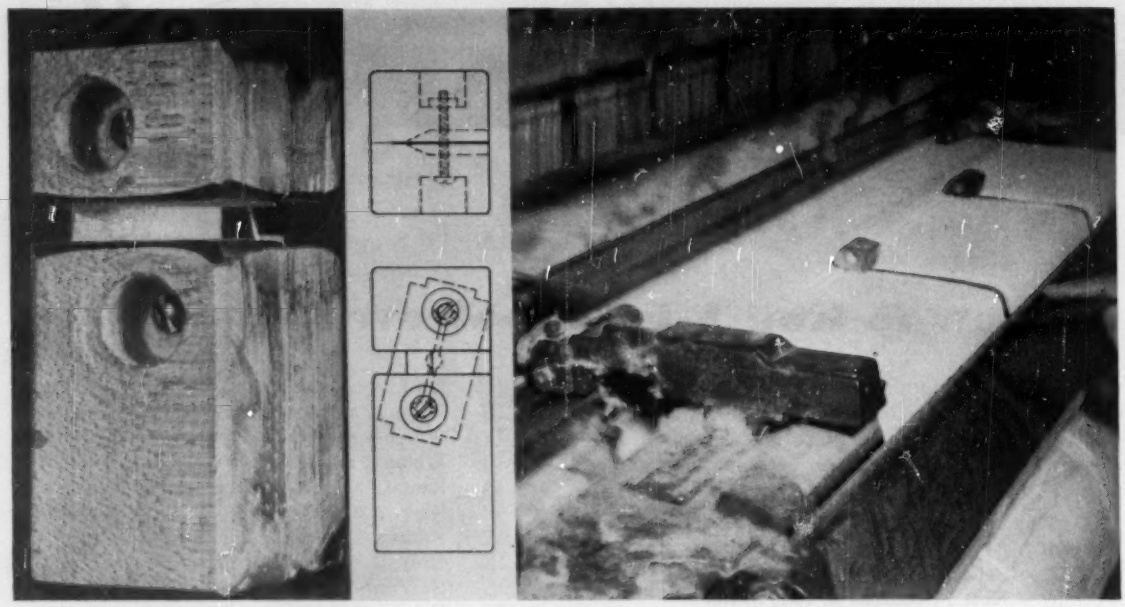
I. Set machine for 144-needle start.
II. Knit 8 courses at this width.
III. Widen 5 needles in 16 courses.
IV. Widen 10 needles in 15 courses.
V. Knit 50 courses at this width.
VI. Narrow 28 needles in 4 courses.
VII. Knit 2 courses at this width.
VIII. Knit a loose course, then 16 courses straight for raveling

CONTRIBUTOR No. 8801



HOW OTHER MEN MANAGE

How a Terry Mill Made a Doupe Selvage Cutter



THE DOUPE selvage cutter shown in the accompanying illustrations was designed and made at a Canadian mill for splitting terry towels woven on wide looms.

The cutter is not attached to any part of the loom; it is inserted in position with the blade facing the doupe edge and the back flush against the inside edge of the breast beam. It stays in this position all of the time; as the cloth is taken up, its movement against the blade effects the separation of the various sections of the goods.

The cutter shown in the illustrations is made of wood, with an ordinary double-edge razor blade as the cutting edge. Its dimensions are 3″ high, by 1½″ wide, by 1¼″ deep.—*Staff.*

These Calculations Give Correct Weight for Braking Rope on Section Beams

EDITOR TEXTILE INDUSTRIES:

On slashers which do not have automatic control of the amount of tension on the section beams, it is possible to calculate the weight which should be attached to the free end of the braking rope to maintain uniform tension from start to finish of the beam.

First, it is necessary to find the specific gravity of the yarn on the section beam to determine the effective radius of the unwinding yarn. The average specific gravity of the yarn on the beam is:

$$Sg = \frac{w}{h\ (re^2 - rb^2)\ 3.14}$$

where

Sg = specific gravity in lb/in.³
re = radius of yarn on beam, in.
rb = radius of beam barrel, in.
h = distance between beam flanges, in.
w = net weight of yarn on beam, lb

The effective radius of the yarn on the beam, for a given length, is:

$$rt = \sqrt{\frac{d \times y}{Sg \times 3.14h \times 256} + rb^2}$$

where

rt = effective radius of yarn on beam
d = weight per yd of yarn, drams
y = length of yarn, yd

Next, it is necessary to decide the tension in drams per end which is best for the yarn being run. Then, the total weight to apply to the free end of the braking rope is:

$$Wt = \frac{T \times N \times rt}{rh\ (e^{fa} - 1)\ 256}$$

where

Wt=weight on end of rope, lb
N=number of ends on section beam
T=tension, drams per end
rh=radius of circle made by brake rope
e=base of natural system of logarithms=2.718
f=coefficient of friction between rope and beam
a=contact angle of rope and beam, degrees

(Continued on page 171)

CARDING IS THE FOUNDATION FOR QUALITY

NO. 24

Tips on Woolen and Worsted Carding

OBJECTIVES OF WOOLEN AND WORSTED CARDING

The main objectives in woolen carding are as follows:

1. To open up the stock, break up bunches, etc.
2. To eliminate as much foreign matter as possible such as burr, trash, etc.
3. To further blend and mix the stock.
4. To deliver the stock in a continuous and uniform sliver of prescribed weight and thickness.

In addition to the above, worsted carding has two additional objectives, namely, the parallelism of the fibres and the maintenance of fibre length.

Without a doubt, one of the greatest problems in woolen carding is the production of quality roving. Poor and uneven roving is one of the main reasons for decreased efficiency in the spinning and weaving departments and subsequent defects in the finished cloth.

SOME CAUSES OF UNEVEN ROVING

1. Improper cleaning and mixing of the stock or inferior stock.
2. Improper blending — By this is meant the making of a blend or mix of stocks which because of their very nature (fibre length, diameter, etc.) are not suited to make quality roving.
3. Irregularity in the application of emulsion to the raw stock. Improper oiling causes fibre breakage, increased stripping, rolling and pilling of the stock. If too acid it ultimately results in the destruction of the card clothing and any leather or rubber component on the card.
4. Faulty operation of the automatic feeder due to improper maintenance and adjustments.
5. Poor card maintenance—without proper card maintenance it is impossible to produce high quality roving capable of being spun into quality yarn.

In too many instances poor and uneven roving is a direct result of the following:—

a. Card not properly aligned and leveled, i.e., worker, tumbler, fancy being out of alignment with the cylinder, etc.
b. Worn bearings and gears, belt slippage, loose set screws and keys, etc., causing irregularity in speeds of workers and/or doffers; especially on the finisher card.
c. Shafts out of true, broken parts, etc.
d. Improper upkeep of the metallic breast. In particular, poor setting of the feed rolls and lickerin prohibit the stock being delivered evenly to the breast cylinders.
e. Old and worn out card clothing; or clothing which is in poor condition due to improper grinding (hooked or shelling out) improper stripping (resulting in loss of pitch) or improper setting (which results in facing of the card wire.)
f. Incorrect setting of the fancy which besides producing uneven roving also causes fly, neps, etc.
g. Tapes which have rounded edges and consequently will not divide the web evenly or the replacement of only a few old tapes in a set with new ones.

SUMMARY

Although the causes of uneven roving are many and varied, the chief offender is generally the card or the card clothing.

As the trend toward greater and greater production increases, less down time is allowed for maintenance, repairs, grinding and setting of the card. Accordingly, the type of stock, its preparation before the carding operation and in particular the condition and care given to card clothing are the determining factors in the ultimate production of quality fabrics.

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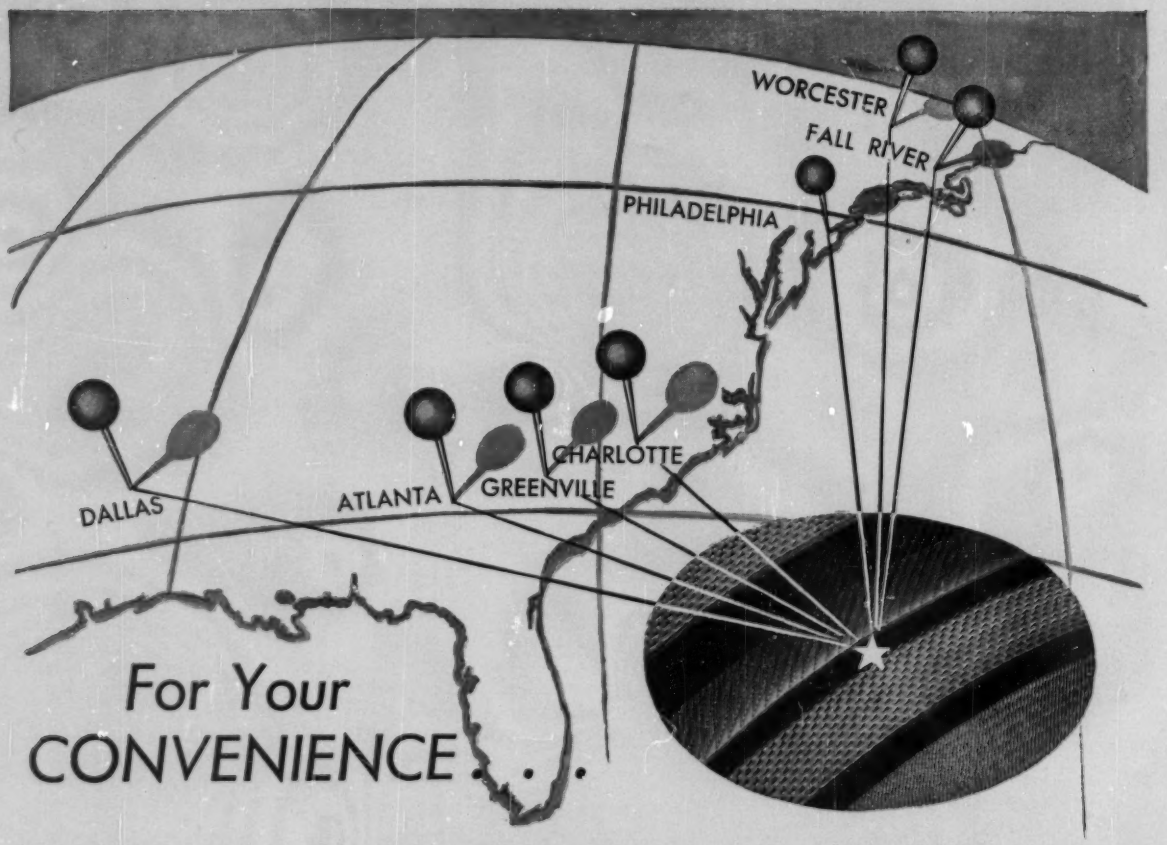
please turn the page ➧



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Three factories (Greenville, Philadelphia and Fall River), six repair shops (Greenville, Charlotte, Atlanta, Dallas (Textile Supply Co.), Philadelphia and Fall River) and seven distributing points (Greenville, Charlotte, Atlanta, Dallas, Philadelphia, Worcester and Fall River) make Ashworth Card Clothing and Ashworth Service *conveniently* yours.

Nearly a century of manufacturing experience makes Ashworth Card Clothing *dependably* yours.

PRODUCTS AND SERVICES

Card Clothing for Cotton, Wool, Worsted, Silk, Rayon and Asbestos Cards and for All Types of Napping Machinery, Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Top Flats Reclothed.

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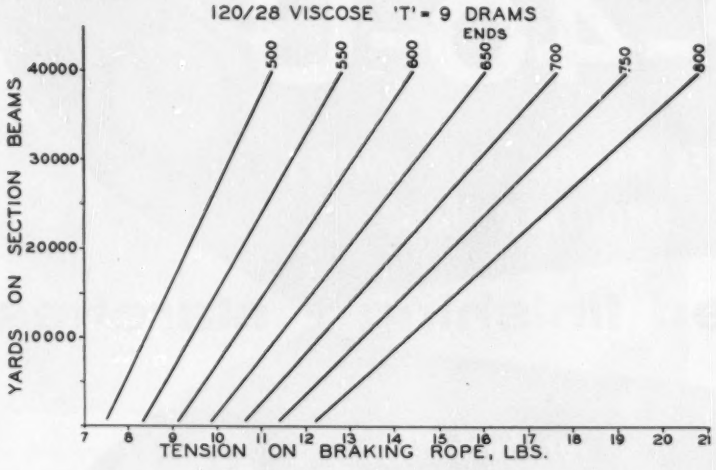
Worcester, Mass.	Pleasant 3-4430
Fall River, Mass.	5-7886
Los Angeles, Calif. (E. G. Paules, Rep.)	Axminister 3-6265

Ashworth CARD CLOTHING

Values of e^{fa}

a°	f=0.1	0.15	0.20	0.25	0.30	0.35	0.40
36	1.06	1.10	1.13	1.17	1.21	1.25	1.29
72	1.13	1.21	1.29	1.37	1.46	1.55	1.65
108	1.21	1.32	1.45	1.60	1.76	1.93	2.13
144	1.29	1.46	1.65	1.87	2.12	2.41	2.73
153	1.31	1.49	1.70	1.95	2.23	2.55	2.91
162	1.33	1.53	1.76	2.03	2.34	2.69	3.10
171	1.35	1.56	1.82	2.11	2.45	2.84	3.30
180	1.37	1.60	1.87	2.19	2.57	3.00	3.51
189	1.39	1.64	1.93	2.28	2.69	3.17	3.74
198	1.41	1.68	2.00	2.37	2.82	3.35	3.98
216	1.46	1.76	2.13	2.57	3.10	3.74	4.52
252	1.51	1.93	2.41	3.00	3.74	4.66	5.81
288	1.65	2.13	2.72	3.51	4.52	5.81	7.47



(Continued from page 168)

From these calculations it is possible to construct a diagram such as is shown in the accompanying illustration, from which the proper weight can be determined for any length of yarn on the beam. For example, with a 120/28 viscose yarn, where h = 54", w = 630 lb, f=0.25, rb=7½", d=5½ drams, e^{fa}=2.19, rh=15", y=2000 yds, T=9 drams, re=12", a=180°, and N=800, then:

$$Sg=\frac{630}{54\ (144-56.25)\ 3.14}=0.0423\ \text{lb/in.}^3$$

$$rt=\frac{5\text{-}1/2\times2000}{0.0423\times54\times256\times3.14}+56.25=7.9\ \text{in.}$$

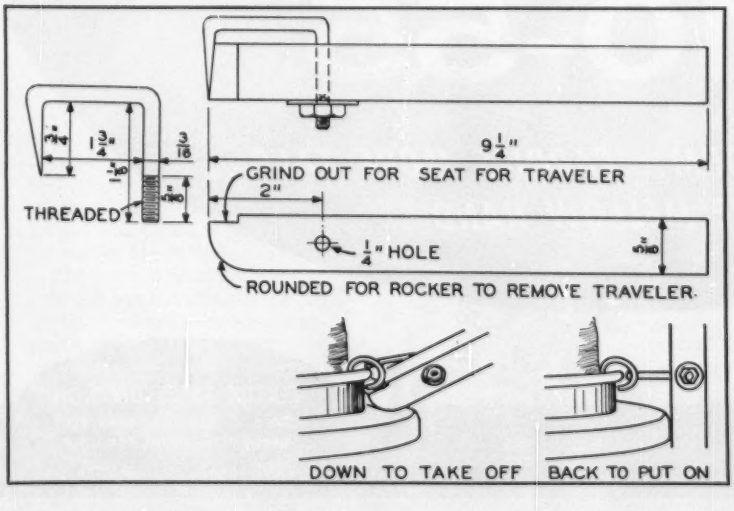
$$Wt=\frac{9\times800\times7.9}{15\ (2.19-1)\ 256}=12\text{-}1/2\ \text{lb.}$$

The accompanying chart was constructed in this manner for 120/28 viscose with 9 drams tension per end. As an example of the use of the chart, if 30,000 yards of yarn on section beams with 700 ends each is to be slashed, from the diagram it is seen that the following weights must be used:

Yarn Wound from Section Beams Yd	Weight on Brake Rope Lb
2000	16
2000-8000	15
8000-13,000	14

CONTRIBUTOR No. 8811
(Italy)

Mill-Made Tool Easily Removes Heavy Travelers



EDITOR TEXTILE INDUSTRIES:

We are spinning heavy mop yarn, which requires heavy travelers (20 grains or more). Removing these travelers not only takes a lot of time, but there is a comparatively high amount of traveler breakage.

We developed a tool for removing and installing these heavy travelers, as shown in the accompanying illustrations.

To remove a traveler, the traveler is pushed to one side with a finger, the hook is inserted into the traveler above the ring, and the bottom or round end is rested against the rail. The flat surface

(Continued on page 173)

for pure finish...

VICTOR P-40-U

BRIGHTER SHADES AND WHITES...
SMOOTHER HAND

improved finishing starches

for backfill...

VICTOR 10-55

ALWAYS UNIFORM... CARRIES MORE TALC...
MORE MELLOW HAND

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Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
1200 S. C. NATIONAL BANK BLDG.
GREENVILLE, SOUTH CAROLINA

(Continued from page 171)

of the tool goes under the traveler.

Pressure is put on the tool in a downward direction, which lifts the traveler off the ring.

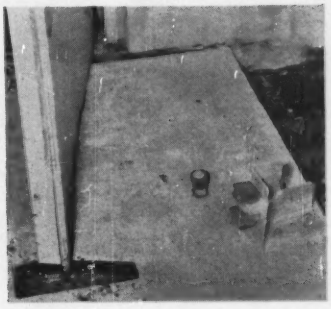
To put on a traveler, the traveler is first put over the inside edge of the ring, and the hook is inserted through the traveler with the tool held at right angles to the ring rail. A slight pull on the tool will spring the traveler over the flange and into place.

The tool is made of 5/8" cold rolled steel, 9¼" long, and the hook is made of 3/16" rod.

CONTRIBUTOR No. 8815

HOW OTHER MEN MANAGE

Magnetic Door Holder Replaces Wedge

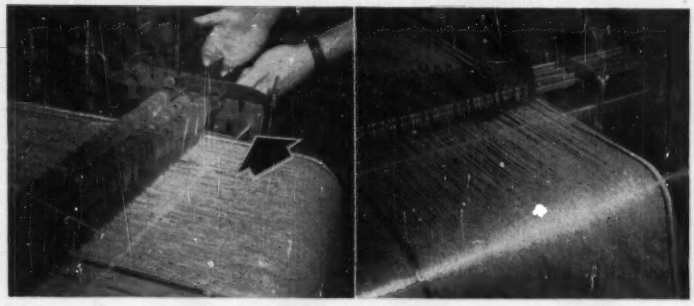


The magnetic door holder shown at the right in the above photo does away with the wedge at left, and reduces door maintenance costs. Including the rough horseshoe magnet used, and the aluminum brackets, plus labor, the whole installation cost about $20.

It is estimated that the magnetic holder will double door life, besides smoothing traffic flow.

The magnet can also be applied to wooden doors by installing a metal plate on them. — *Carboloy Dept., General Electric Co.*

How to Install Drop Wire Banks In One Easy Operation



Instead of securing drop wire contact bars into section heads individually, J. A. Humphrey & Sons Ltd., Moncton, New Brunswick, Canada, keeps them in their fiber hanger (arrow) as used on drawing-in frame when dropping wires, and adds a top and a clamp. In this way all contact bars are contained in one frame and can be handled as one part for easier installation and removal as shown in left photo.

Section heads have been removed and replaced with fiber brackets attached to the loom in which the bank is dropped.

The bank, one fiber hanger, and one clamp are seen at right as installed.—*Staff.*

$100 HURRY! HURRY HURRY! **$100**

Kink Contest Closes December 15, 1955. Send Your Entry Now!

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are judged.

The contest rules are simple:

► All contributions must be postmarked not later than midnight, December 15, 1955.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: Editor TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 5, Georgia.

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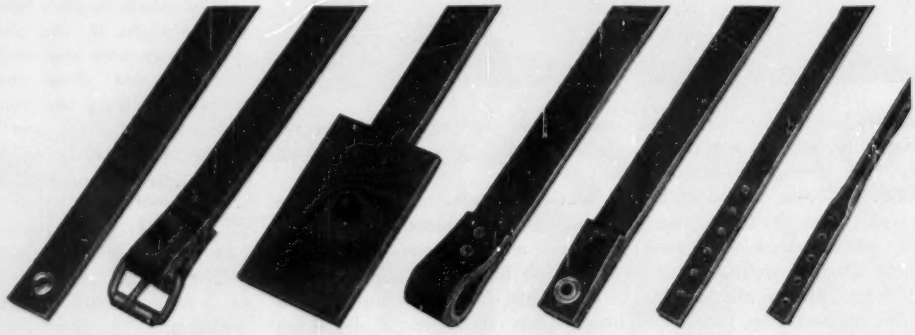
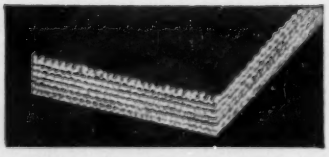
STEP UP LOOM PRODUCTION

The JACOBS line of rubberized fabric loom strapping is unequalled for strength, long life, and resistance to oil and heat. Immediate delivery in any width or shape. Why not order now for your immediate needs and anticipated requirements?



AN ENGINEERED PRODUCT:

Pre-stretched and treated for flexibility. Uniform in thickness. Requires a minimum of adjustment.



Available: 5/32" and 7/32" thicknesses

Immediate delivery in any width or shape

THE BULLARD CLARK COMPANY

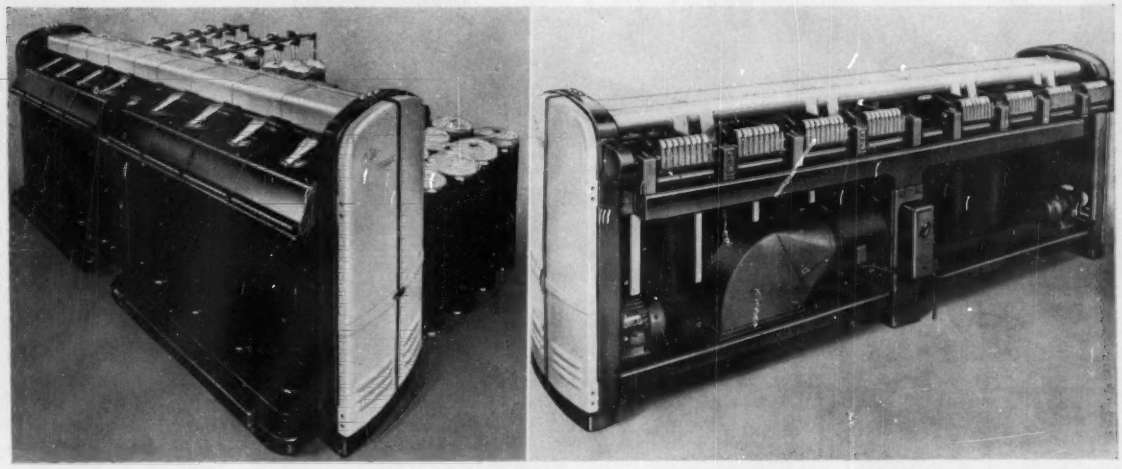
JACOBS

SOUTHERN DIVISION
Charlotte, N. C.

NORTHERN DIVISION
Danielson, Conn.

NEW EQUIPMENT PARADE

Machines and Equipment . . . Supplies and Services . . . Dyes and Chemicals . . . Books



Over-all (left) and rear views of the Whitin "Even-Draft" drawing frame. Note Pneumafil duct work.

Drawing Frame for all 7/8" - 3" Fibers Produces More than 300 lb per hr

The Whitin "Even-Draft" drawing frame is an entirely new machine which operates at speeds ranging from 2½ - 3 times the speed of conventional drawing frames and which is truly universal in that all fibers from ⅞" to 3" can be processed on it, with sliver quality superior to that produced on drawing frames now commercially available.

The new frame is a precision-built, massive, high-speed machine built with eight deliveries, each four-delivery section being independently driven. It is designed to operate at 250-300 feet per minute front roll delivery speed, providing up to more than 300 lb per hr net production, depending upon the fiber run and the sliver weight.

The drafting element in each delivery uses a four-over-five roll arrangement similar in principle to the draw box on the Whitin Model J comber. Removal of waste fibers from the rolls and drafting area is achieved by the use of air vacuum. Weighting is applied by enclosed springs mounted above the roll ends. Up to eight ends of either carded or combed sliver can be processed.

With this drawing frame, the normal, well-run mill can produce drawing sliver in the range of 15 - 17% variation (i.e. approximately 2.9% deviation Uster) for carded work and 10 - 12% variation (i.e. approximately 2.5% deviation Uster) on combed cotton.

Capable of handling all fibers up to three inches long, this drawing frame is an all-purpose machine. The nuisance of having to change front roll diameters to accommodate stock with different staple length is eliminated. It is no longer necessary to compromise and accept less than optimum quality when changing from one fiber length or type to another.

In all, this machine has a total of 152 anti-friction bearings, providing the smooth-running, trouble-free bearing performance so necessary for high production and low power consumption. All of the exterior surfaces are smoothly streamlined both for pleasing appearance and to minimize dust or lint accumulation.

The drafting element differs from other 4-over-5 systems in several major respects: the location of the draft zones; the size, position, and function of the rolls; the weighting; and the accessory mechanism for removing waste from the top and bottom rolls. The five bottom rolls from front to back are, in order: 2", - 1", - ¾", - 1⅜", - 1⅜" in diameter. With the exception of the ¾" roll, all are regular fluted rolls. The four top rolls are all 1⅝" in diameter and covered with a standard synthetic cushion. All roll adjustments are made from above the stands.

The new top roll weighting mechanism is very simple in construction, consisting of two pivoted arms from each of which is suspended four completely enclosed springs. Pressure is applied to each top roll by the springs and buttons, and held very closely to the required load. Each unit is held in position by means of a toggle actuated by a lever. The weighting can be quickly applied or released on each delivery.

Waste removal is secured by an entirely new device manufactured by Pneumafil Corporation. An integral part of the frame, it consists of an enclosed unit above the rolls and a similar unit below the bottom rolls. The

MODERNIZED PICKERS FOR YOUR OLD ONES

INSTALLED OVERNIGHT!

Aldrich offers important picker improvements, but you do not have to buy new to get these benefits. Your old frames are good, and thoroughly modern pickers can be built right into them.

Without interruption to production, you can exchange your pickers for rebuilt pickers of the same model. The new picker — and it will be new in every production sense — will be producing laps the day after it is delivered.

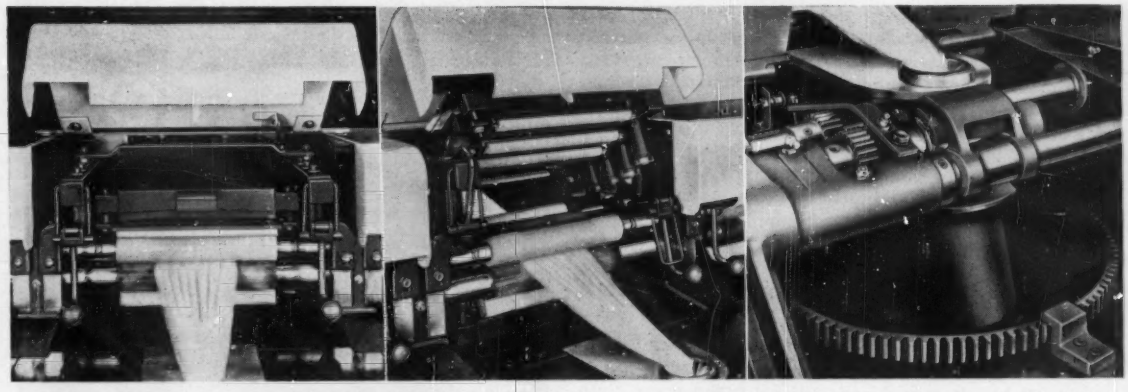
If your pickers do not need complete rebuilding, a thorough overhaul job can be done right in your picker room with one of our skilled men in charge of the work.

Within 24 hours after we get your order for picker repair parts, they will be on their way to you because we keep a large stock on hand.

If it is an emergency, phone us in the morning, and your parts will be in your mill the next day, within 500 miles of Greenwood.

AldricH MachinE WorkS

Greenwood, South Carolina



Pneumafil units for removing waste fibers from the drafting zone are shown in the left and center photos. (In center photo Pneumafil top unit is raised to show collecting ducts.) Right, calender rolls and tube gear, both equipped with anti-friction bearings.

waste fibers are lifted from the rolls by pads extending along their length and then removed through ducts to a collecting box in the machine. The air used is then gently discharged back into the room near the floor. The first three lines of top rolls and the first four bottom rolls are cleaned by this unit. All waste fibers are immediately removed from the rolls and the drafting area by this Pneumafil clearer unit, so there is no possibility of their dropping back into the stock. The task of picking clearers is completely eliminated, and the total cleaning requirements substantially reduced.

An extended creel back is used and a new arrangement of lifting rolls and sliver pan to provide full support of the slivers and to reduce stretching. For running eight ends a creel is recommended; this prevents sagging and stretching of the slivers, keeps them from dragging on the edges of the can or tangling, and assists both in smooth withdrawal from the can and stock transfer to the drafting rolls.

The sliver is deposited in cans which are carried on a special can table. The cans are carried by the can table in such a manner that the coils are built up in the can, without any can rotation. As a result, the sliver is completely free of twist, a factor which improves subsequent drafting action.

The coiler unit and gearing have also been improved. Toggle type calender rolls are adjustable to control the amount of condensing desired in the sliver. Modifications in the design and aperture of the anti-friction tube gear result in the elimination of chokes and provide for optimum coiling of the sliver in the can. With cans 16" in diameter and 42" in height, the contents will range from 32 to 38 lbs.

Each set of four deliveries constitutes a separate unit with its own motor, gearing, and can table drive. The gearing is all easily accessible. This separation results in extreme flexibility, allowing virtually every variation in processing that might conceivably be encountered, such as running breaker and finisher at the same time with different drafts and sliver weights, or blends requiring slightly different back drafts.

Three shock-proof electric stop motions are provided. One indicates a run-out from the cans or a sliver break in the creel and is actuated by the lifting rolls. The second is a sensitive knock-off motion connected to the calender rolls and which can be easily adjusted to detect any desired variation in sliver weight. The third electrical relay stop motion is controlled by the full-can stop mechanism. A predetermining counter can be set for the number of yards desired in the can.

Each of the three stop motions is connected through an electronic relay box to a light on each head end, a green light showing full cans, a yellow showing a sliver run-out or break in back, and a red showing that attention is required at the coiler. By glancing at the light, the operator can immediately locate the cause of the stoppage. In any such instance, only four deliveries would be stopped. This feature is an aid in improving frame and operator efficiency.

As a further assistance in improving operator efficiency, the frame is equipped with six push button stop and start stations, two located in front and four in the back. For safety, the double doors which enclose the entire gearing for each head must be closed before the section will start up.

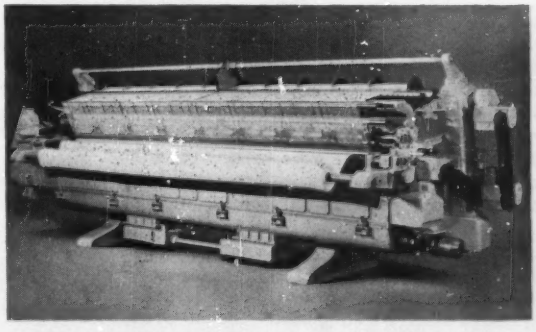
Quick and accurate lubrication is secured by the Bijur system. The stroke on the Bijur pump is lifted once per shift. The roll stands and calender rolls are supplied with grease gun fittings.

Total power requirement is only 7½ hp.

Whitin Machine Works, Whitinsville, Mass.

Do you want more data? Write ◂ or use card, p. 205; list M-101

168" Tricot Knitter Operates at 900 cpm



Kidde Manufacturing Co., Inc., and F. N. F. Limited, Burton-on-Trent, England, are negotiating an agreement whereby Kidde is granted the right to manufacture in the U. S. A. the new 168" wide F. N. F. high speed tricot machine for the American/Canadian markets, and F. N. F. is granted the right to build the Kidde Knitter for mills in Britain, in the British Commonwealth (excepting

Canada), and the continent of Europe.

The 168" F. N. F. machine was shown for the first time at the recent Brussels exhibition and ran at a cruising speed of 900 courses per minute. It accommodates beams with 21" diameter flanges, knits a wide variety of constructions including long runner length, provides high yields, and handles all rayon and synthetic yarns commensurate with the gauge of the machine.

The machine has an improved continuous beam let-off and also a continuous cloth take-up fitted with double rollers so that there can be no slippage. The cloth roller has a capacity up to 14" in diameter without affecting machine accessibility. Either pattern wheel or chain links may be used.

The machine is built with a heavy cast iron bed resting on feet which make installation and leveling easy.

Deliveries of the new machine produced in this country will begin next year.

Kidde Mfg. Co., Inc., Bloomfield, N. J.

Do you want more data? Write ◆ or use card, p. 205; list M-102

Variable Speed Positive Let-Off for All Looms

A variable speed positive let-off that provides exact warp control and is adaptable to all makes of looms is now available. It cannot and will not make wavy cloth or cause stop marks, set marks, and start marks.

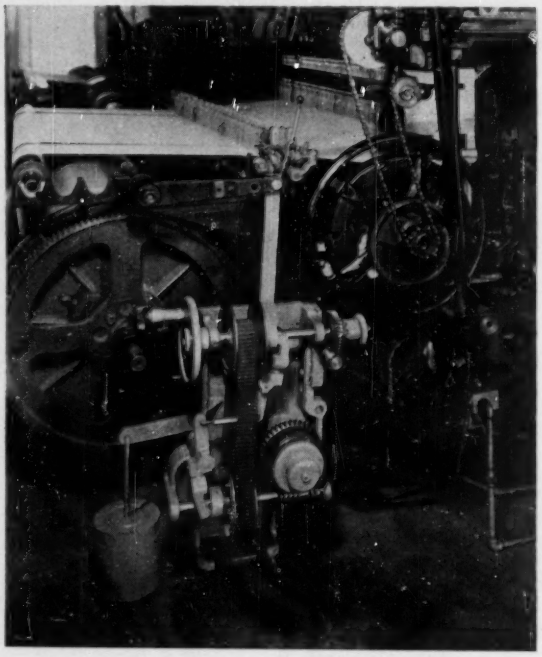
The device is mounted on the bracket that carries the let-off shaft and may be easily and quickly attached to a loom. It operates as follows:

It is driven by a roller chain from the cam shaft to an adjustable stud on which is mounted a worm, which in turn drives a worm gear on a horizontal shaft. The Reeves variable speed unit drives from this shaft to a second horizontal shaft, and this shaft carries a worm which drives the worm gear on the let-off shaft.

This let-off employs no ratchets or pawls or other intermittent motions and does not require a beam follower because, while the 24-inch and 26-inch beams require speed variations of about 4 to 1 and a 30-inch beam requires 5 to 1, this variable speed unit has a capacity of 9 to 1. This surplus capacity makes it possible to weave a considerable variety of fabrics with more or less picks per inch without other adjustments.

When changing from one fabric to another that is beyond the capacity of this unit—for instance, like jumping from 20 picks to the inch to 100 picks to the inch—it is only necessary to change the worm on the adjustable stud and the worm gear that meshes with it, which can be done in about five minutes. With this variable speed unit, the speed changes necessary to go from a full to an empty beam is so slow that it is not visible to the eye.

This let-off is controlled by a built-in scale that controls the variable speed unit by weighing the tension on the warp.



Southern Loom Development Co., 2222-2224 Augusta St., Greenville, S. C.

Do you want more data? Write ◆ or use card, p. 205; list M-103

Ultrasonic Equipment Cuts Wet Process Time

Ultrasonic equipment of two general types is offered which will permit textile wet processors who are in position to do some moderate research to work out profitable applications for themselves. (Small samples of Orlon and Acrilan knitted fabric have been dyed by this particular equipment manufacturer in three minutes at a temperature of 170 F utilizing ultrasonic equipment.)

Investigations, research, and small scale processing at one low frequency and one high frequency may be performed with the Type T-1 Sonicell powered by the G. U. 400 Ultrasonic Generator. The treatment chamber is stainless steel which permits use of a wide variety of liquids. There is a drain plug at one end which makes it possible to drain and recirculate the process liquid during operation.

For full-scale plant operations is the D-1 Sonicell designed for use in new or existing dye vats or any type of process tanks made of metal, wood, or whatever is desirable for the particular process liquid. It radiates ultrasound from its curved upper surface and disperses the radiations through the volume of liquid in which it is immersed.

This transducer may be furnished in groups or arrays of sufficient number to irradiate a process tank of any size. It is estimated that for most processes a single D-1 Sonicell can take care of approximately 1 sq ft of tank area. Power requirement for optimum operation has still to be determined, but will probably be in the order of 200 watts to a kilowatt per D-1 Sonicell. These groups or arrays of Sonicells are driven by motor-alternator equipment. The manufacturer expects to be able to supply this type of generating equipment down to 2 kilowatts and up to almost unlimited power requirement, either in the form of larger units or in multiples of 5 or 10 kilowatt generators.

The General Ultrasonics Co., 1240 Main St., Hartford 3, Conn.

Do you want more data? Write ◆ or use card, p. 205; list M-104

Get Better Roving from Longer-Lasting Rub Apron

A new, longer-lasting rub apron that will assure improved yarn uniformity has been developed.

The special construction of the apron gives it greater gripping qualities than previous types. Eccentric motion is reduced also, which makes the apron last longer.

The aprons have two layers of rubber-impregnated, reinforced fabric. There also are stronger ends to hold the buttons securely in place.

A new synthetic rubber composition helps the aprons resist the abrasive action of constant rubbing. As a result, the surface does not become glazed, proper density is given to the yarn, and the quality of yarn output per machine is increased.

The rub aprons are perfectly concentric, hugging the rolls tightly for better traction, tracking, and a non-slip drive. They are unaffected by oils used in the emulsion and do not "grow." The aprons are unaffected by temperature and humidity changes and absorb no color pigment from dyed wool. They are static free.

Dayton Rubber Co., Dayton, Ohio.

Do you want more data? Write ◆ or use card, p. 205; list M-105

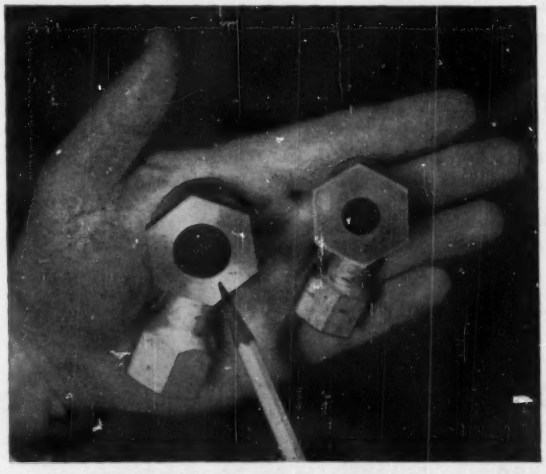
Self-Cleaning Spray Nozzles for Central System Conditioners

A self-cleaning spray nozzle for central system air conditioners that won't clog regardless of the amount of lint or other fine foreign matter in the air was announced recently.

Employing orifices of special design and flexible material, the new nozzles "spit out" all obstructions impeding the flow of water to be atomized.

Trade-named "Cant-Clog," they are standard in all new Carrier spray type air conditioners. Available in conventional sizes, they can be used to replace existing nozzles in a wide variety of air conditioning equipment.

Here's how the new flexible diaphragm on the spray nozzle works: If some lint or other foreign material is



caught behind the orifice, pressure from the water immediately builds up within the nozzle forcing the diaphragm to stretch, enlarging the orifice. In the expanded position, the restrictive particles are easily expelled.

The new product has just undergone a year-long performance test. The central conditioning apparatus in a southern textile mill where quantities of airborne lint were particularly heavy were completely equipped with "Cant-Clog" nozzles. To make the test even more severe, the screens normally used to help protect nozzles from becoming choked were removed. During this period the system has operated without a single nozzle becoming plugged. The old types of nozzles had to be cleaned every two weeks even when the protecting screens were used.

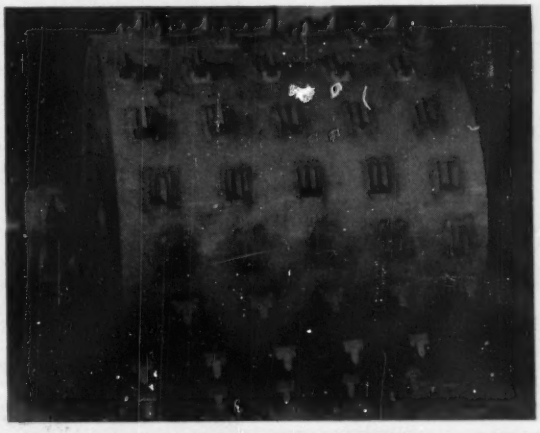
Nozzles for medium pressures are made in two sizes with a low pressure cap also available for the smaller model. Caps will fit many existing nozzles.

Simply installed, the nozzles assure constant spray patterns year-round no matter how heavily laden the air. The rugged elasticity of the specially-treated orifices cannot be partially blocked to cause fluctuations in interior atmosphere or equipment performance.

Carrier Corp., Syracuse 1, N. Y.

Do you want more data? Write ◆ or use card, p. 205; list M-106

It's Easy to Replace Teeth in this Bale Breaker Cylinder



A new design of Taylor-Stiles bale breaker cylinder has been announced.

Instead of teeth being welded directly to the cylinder, sockets are now employed and teeth are driven into them. The direction of rotation of the cylinder tends to tighten the teeth in the tapered sockets.

When at long last a tooth wears out, it can be driven out of the socket and replaced with a new tooth.

Notice in the accompanying illustration the staggered arrangement of the teeth and the large diameter of the cylinder.

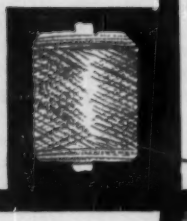
Taylor, Stiles & Company, Riegelsville, N. J.

Do you want more data? Write ◆ or use card, p. 205; list M-107

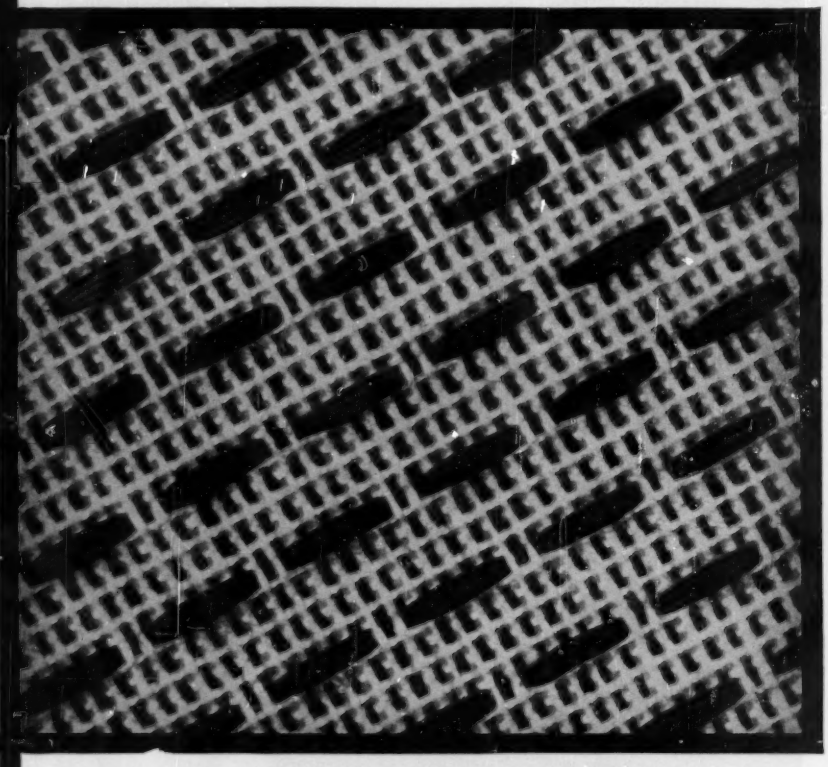
Needle Oil for Fine Gauge Hose Machines

A special needle oil to overcome the difficulties of high-speed, fine-gauge knitting operations has been announced. Called Vexilla Oil 117, the new product includes an inhibitor which prevents the formation of rust for several days, regardless of whether the machine is in operation or idle.

This needle oil was specifically developed for use on 51-, 60-, 66- and 75-gauge hosiery machines, using either monofilament or multi-filament yarn. Because it contains



The Close-up of Construction



An original fabric using B & C yarns magnified 100X.

GUARANTEE

The Quality of Boger & Crawford Yarn is guaranteed — the highest tribute we can pay it!

Signed

Frederick Boger

The Yarn that makes Fine Fabrics

You get fine fabrics every time with BOGER & CRAWFORD Bleached Dyed and Mercerized yarns. That is because you get quality yarns.

Illustrated is an unretouched photograph of a new fabric made with B & C yarn. Judge for yourself the distinctiveness of the fabric. Note the appealing close-up of construction.

You are invited to write today for full advantages offered by B & C quality yarns.

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Morris R. Copeland & Sons, Box 5032, Chattanooga, Tenn.

a highly effective cleaning agent, the oil is particularly suited for knitting sized nylon yarn without difficulty; size deposits are appreciably reduced on needles, sinkers, and dividers, thus eliminating many unnecessary cleanings. Also, Vexilla eliminates oxidation, gum formation, and copper soap deposits, and does away with sluggish machine starts after extended shut-downs.

This new oil is easily scoured out of grey hose and causes no discoloration or oxidation if the hose are stored for a while before being dyed or finished. Any method which will insure an adequate quantity of this oil in critical areas may be used to apply it.

Shell Oil Co., 50 West 50th St., New York 20, N. Y.

Do you want more data? Write ◂ or use card, p. 205; list M-108

Bondable Nylon Spinning Tape

The development of a bondable nylon spinning tape has been announced by Burlington Narrow Fabrics, a member organization of Burlington Industries.

According to Burlington, the nylon tape, "Burnylbond," will outlast conventional tapes three to four times and, because it is bondable, it can be formed into an endless belt without distortion at the point of splicing. The splice can be taken apart and rebonded as well. In addition to eliminating distortion, bonding takes less than half the sewing time.

A bonding machine and a hot cutting and fusing machine, both of which can be operated by a semi-skilled employee after a minimum of training, are available for use with the nylon tape.

The tape maintains uniform speed of spindles since it has exceptional contour traction power. This eliminates "slipping," which in turn causes a lack of uniformity in the twist imparted to yarns.

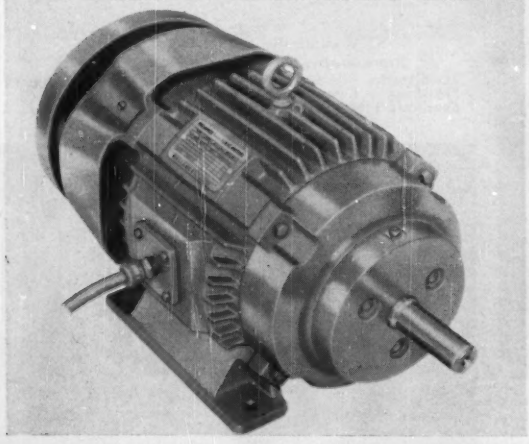
The new tape is thinner and lighter than conventional tapes, shows no loss of tensile strength, and has the advantage of giving optimum performance regardless of temperature and humidity. In addition, strong, non-fraying "hat band" edges eliminate deterioration along the outer edges.

R. E. L. Holt, Jr. and Associates, Greensboro, N. C.

Do you want more data? Write ◂ or use card, p. 205; list M-109

Lint-Free Motor Saves Space

A new line of lint-free design a-c textile motors is now available, conforming to new NEMA dimensions. The motors are available in sizes from 1 through 20 horsepower for use throughout textile mills on such machines as spinning frames, opening machines, pickers, and cards. Totally-enclosed non-ventilated construction is offered to 2 horsepower; totally-enclosed air-cooled from 3 through 20 horsepower.



Significant features include a special finish and smooth contouring to improve lint-passing ability, and a unique design fan cover and bracket. Because of totally-enclosed construction, the motors are completely interchangeable between all applications having the same horsepower requirements, and do not require cleaning.

They save valuable space because of the smaller size—mounting under spinning frames, for example, instead of in the aisle. A lower overall cost is afforded through the reduction of maintenance and cleaning expense. Design and construction innovations of these new motors also reduce the chance of fire hazard and water damage.

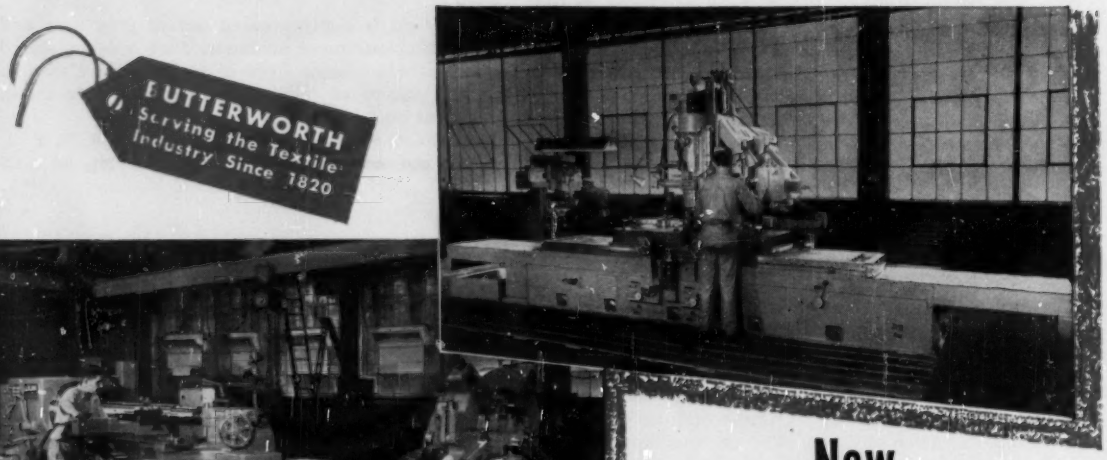
Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio.

Do you want more data? Write ◂ or use card, p. 205; list M-110

Etherized Starch Improves Fullness of Hand in Permanent Finishes

Solvitose HDF is the brand name of a starch ether introduced recently. The starch derivative is cold water soluble and produces a freeze-thaw stable solution with no variation in viscosity.

Its main function is to contribute greater fullness to resin finishes, whether the finish be classed as firm, crisp, or soft. Successfully employed with glyoxal, formaldehyde, urea formaldehyde, and melamine formalde-



New Machines to Save Money for You

We've spent $600,000 in the past 2 years . . . to save you money on famous Butterworth finishing machinery.

The new machine tools on this page are a part of that program. For you, they mean Butterworth high quality at a new low cost. That's because they have increased our productive capacity . . . lowered our labor costs . . . and made it easier to maintain the always-high Butterworth standard.

When did you last price that Butterworth machine you need? Call in the Butterworth engineer today. You may get a pleasant surprise.

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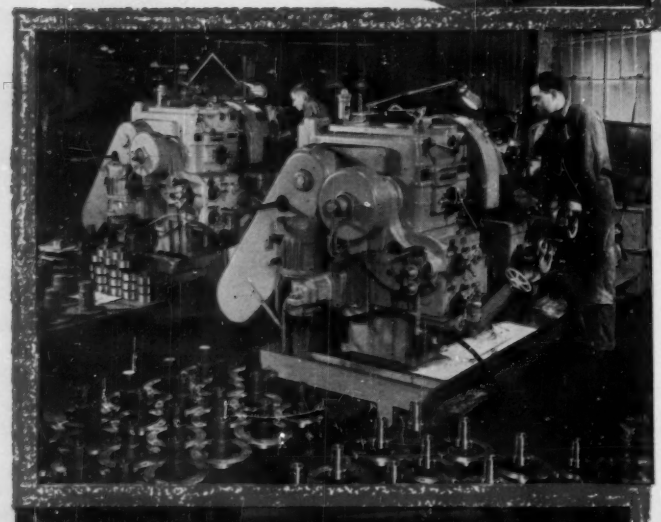
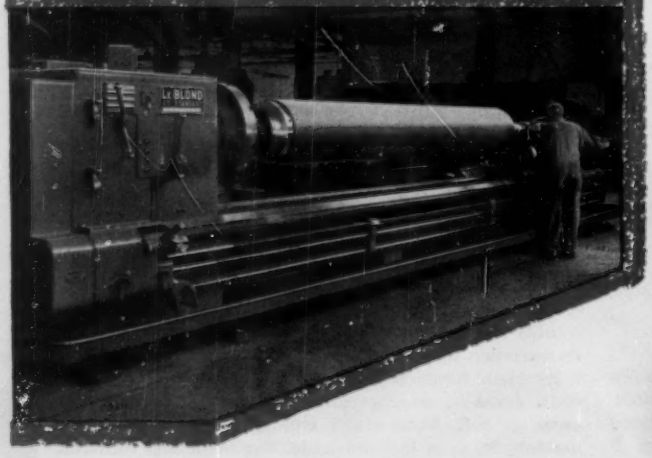
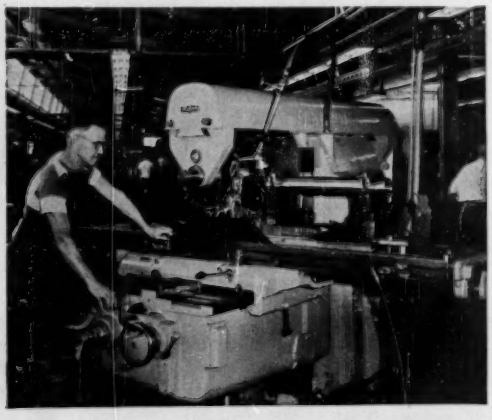






hyde resins, the product greatly improves embossed and friction calendered finishes. It is especially recommended as an excellent hand builder in crease resistant finishes.

Solvitose HDF's value to laundry-resistant, durable, and permanent type finishes is suggested due to the fact that it is easily insolubilized by the above mentioned resins.

Morningstar, Nicol, Inc., 630 W. 51st St., New York 19, N. Y.

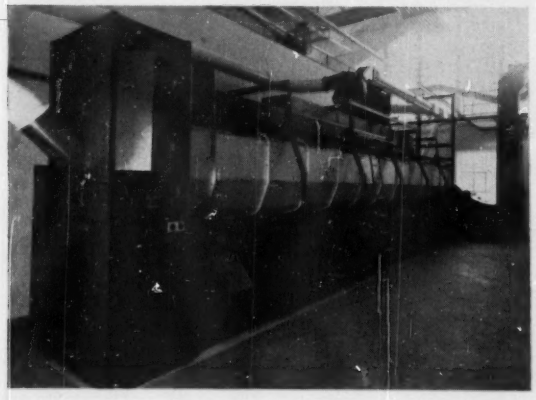
Do you want more data? Write ◄ or use card, p. 205; list M-111

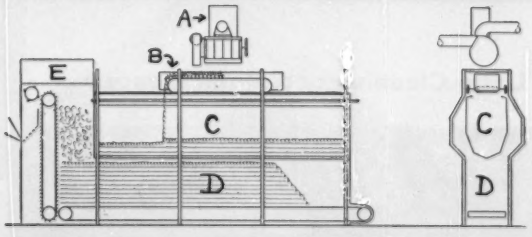
For More Thorough Blending of Fibers

Production of up to 1300 lb per hr of thoroughly blended stock is provided by the new Rieter Automixer, a machine for opening lines in cotton system mills that offers control of the amount of blending imparted to the material being processed. Occupying an area about 45 ft long and 6 ft wide, the machine should be placed in the opening line immediately after the bale breakers.

In the Automixer the stock is spread out over a distance of 40 ft, up to 30 - 40 layers (the exact number can be preset) being placed horizontally one on top of the other. The stack thus formed is constantly decreased vertically so that in the material delivered by the machine there are fibers from 15-20 different components originating, in addition, from bundles of stock which are far removed from each other.

Here is the way the Automixer operates (refer to the





accompanying elevation and cross-section views):

The stock supplied by the mixing bale breakers is dropped from an exhaust and delivery apparatus (**A**) onto the rubber conveyor belt of the distribution conveyor (**B**). The latter traverses the entire length of the machine evenly and at the same time imparts a reversing motion to the conveyor belt. In this way the raw material is spread out in strict sequence in the top mixing trunk (**C**) along the entire length and is stacked into 30 - 40 layers.

Once the number of stacks (set on a counter) is reached, the top mixing trunk (which is designed as a hinged container) opens and delivers the entire batch of fibrous material down into the actual filling or feeding trunk (**D**), the bottom of which is formed by a rubber conveyor belt. The thoroughly mixed block of material thus obtained, which is 40 ft long and 3 - 6 ft high, is now slowly advanced, and its front end presses against the head stock (**E**) of the machine, in which an upright lattice fitted with fine needles vertically doffs the horizontal layers of stock. Ductwork connected immediately after the following stripping roller, serves to convey the stock continuously delivered from the Automixer onto the subsequent opening and cleaning machines.

For the control of the entire machine, for starting and stopping it according to the requirements of the preceding and following machines, as well as for operating the delivery flaps of the top mixing trunk, a compressed-air apparatus which operates in connection with the electric control circuit is utilized.

As soon as the preset number of material layers has been reached in the top mixing trunk, the electropneumatic control interrupts the feeding of the material through the preceding machines. Delivery into the bottom filling or feeding trunk, however, cannot be initiated until a regulating spade incorporated in the head stock end of the machine releases the compressed air for opening the delivery flaps after the bottom block of material has passed through.

After the automatic closing of the top mixing trunk, which follows delivery, the distribution conveyor is set in motion again so as to build up the next block of material.

Maintenance of the Automixer is simplified by the large doors which make access to machine parts easy and also the utilization of sealed ball bearings throughout. Power requirement is very low.

American Rieter Co., Inc., 577 Kearny Ave., Arlington, N. J.

Do you want more data? Write ◄ or use card, p. 205; list M-112

Twister Spindle Needs No Oiling

Design improvements to the Hartford twister spindle provide the following advantages or savings: Simplification of stationary parts has reduced the price; periodic oiling has been eliminated; other maintenance is negligible; exclusive components increase operating efficiency, yet lengthen the spindle's life span.

On Hartford's split base practically all machining has been eliminated. Yet it houses and aligns two pre-packed ball bearings, supports the snap-on spindle brake, and provides at the rail an adjustment controlling height of bobbin seat.

Practically all maintenance occurs when the pre-packed ball bearings need regreasing, or when the brake pad is replaced. At that time servicing is simplified because the snap-on brake also snaps off and out of the way when the mechanic removes the base nuts.

The split base may be quickly disassembled by removing three socket cap screws, so that in about 45 seconds the bearings are exposed for regreasing. This lubrication is needed only about once every five years.

To assure smooth spindle operation, the bearings are cushioned on rubber mounts. To prolong the spindle's life, its blade is chrome plated.

Hartford Machine Screw Co., Hartford, Conn.

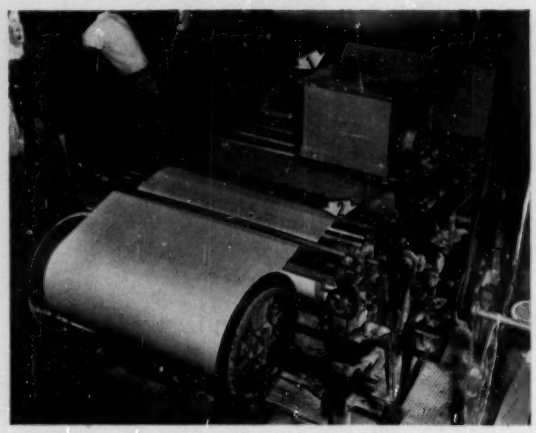
Do you want more data? Write ◄ or use card, p. 205; list M-113

Warp Sizing Development Offers Many Advantages

Now available for use as a top dressing for sized warps, as replacement for fats and softeners in sizing, and as a plasticizer for carboxymethyl cellulose or polyvinyl alcohol sizing is Moretex 70, a product which offers these advantages:

1. More uniform sizing and more effective control of moisture content;
2. Compatible with and plasticizes starch films, producing a flexible, strong, smooth (but not soft) warp;
3. Imparts good aging properties to warp so that beams stored for a period before weaving can still be used with same high weaving efficiency;
4. Reduces shedding;
5. Fabrics woven from warps sized with Moretex 70 are easily and efficiently desized, bleached, or dyed;
6. Improved weaving efficiency due to less warp breaks and increased abrasion resistance;
7. Fewer filling breaks;
8. Permits use of lower relative humidity in weave room;
9. Increased shuttle life;
10. Less frequent covering of binders and box plates.

Applicators for use of the wax-like (it contains no wax), almost white product as a top dressing for sized warps are manufactured by Sunray Co. of Spartanburg, S. C.



Slasher equipped for applying Moretex 70 as a top dressing for sized warps. Arrows 1 and 2 point to tank and applicator roll respectively.

Moretex Chemical Products, Inc., 314 W. Henry St., Spartanburg, S. C.

Do you want more data? Write ◆ or use card, p. 205; list M-114

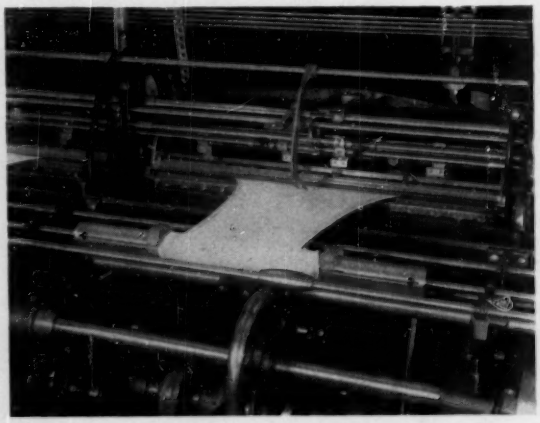
Marking Attachment for F-F Sweater Knitting Machine

Recently developed for full-fashioned outerwear knitting machines was a marking attachment which makes a center line on fabric produced to show where it is to be cut for manufacture of cardigan type sweaters.

The attachment makes a straight line of lace holes, eliminating the necessity for knitters to take out needles to make a runner for cutting the center. There is no loss of time in changing from slipovers to cardigans—all the knitter has to do is pull one lever and the attachment is in operation.

Since the attachment can make one hole or any number desired, it can also be used to mark the center for V-necks and to make designs or markings for buttons and button holes.

With this attachment there is no dipping of the narrowing machine.



United Knitting Machine Co., 8th and Maple Sts., Lansdale, Pa.

Do you want more data? Write ◆ or use card, p. 205; list M-115

Twister with Gear Driven Spindles Requires Little Cleaning and Maintenance

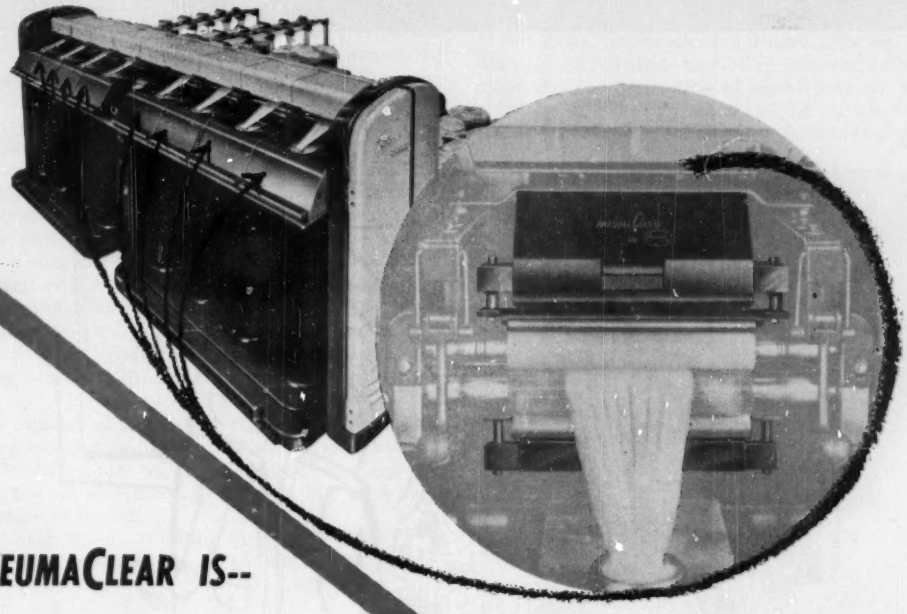
The Hispano Suiza ring twisting frame is 25 inches wide over-all. The distance between the two rows of helical gear driven spindles is only 8 inches.

Any possibility of oil seepage is prevented, which results in exceptionally clean yarn. Due to absence of wind normally created by the cylinder, tapes, belts, etc., there is very little fly. Cleaning and maintenance are reduced to a minimum.

The all-geared headstock is an example of clean-cut design. There are neither driving belts nor chains.

The quantity of yarn per bobbin can be predetermined on this twister by simply setting a calibrated knob.

An automatic, full-bobbin stop motion goes into action when the bobbin has attained the required yardage. The speed of the spindles is first reduced, then the ring rail



PNEUMACLEAR IS--

"The successful solution for the problem of removing waste fibers when such high roll speeds are used."

Quoted from Whitin's reference to the use of PneumaClear on their remarkable new Evendraft drawing frame with speeds of 2½ to 3 times that of conventional drawing frames.

Specifically . . . PneumaClear is an enclosed unit that lifts the waste fibers from the rolls by pads extending along their length. This waste is removed through ducts to a collecting box in the frame. The air is gently released back to the room near the floor.

Pads - fan - motor - collection box and all ducting - the entire PneumaClear is an integral part of the basic design.

PneumaClear is the successful solution for the problem of removing waste fibers when high roll speeds are used!

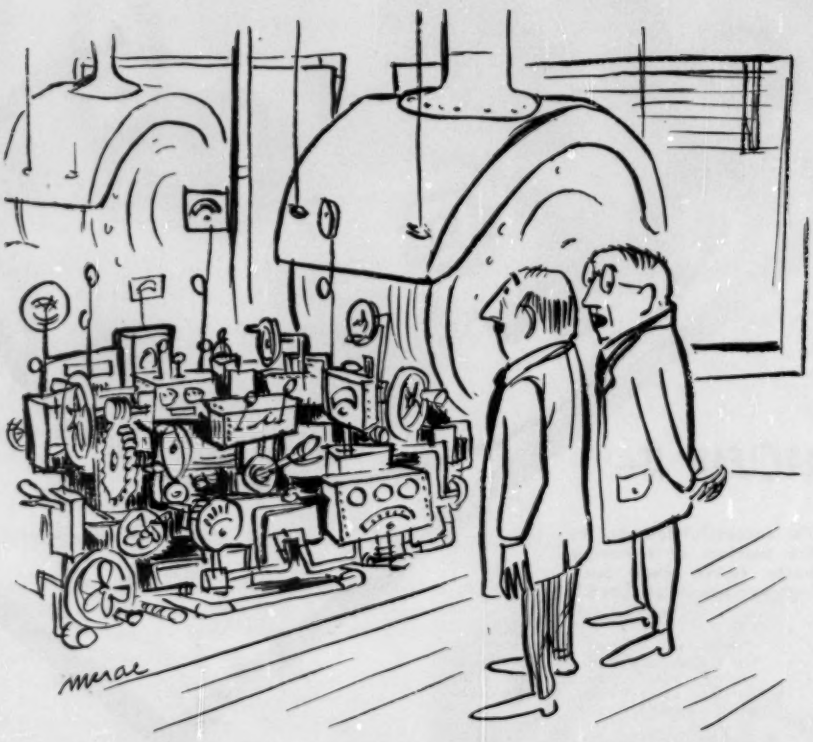
PNEUMAFIL CORPORATION
CHARLOTTE 8, NORTH CAROLINA

PneumaClear
Pneumafil Economizer Unit System
Central Air System
Central Material Recovery System
Lint Free Creel
Pneumastop ®
Pneumacard ®

PNEUMAFIL ®

PRODUCTS OF PROGRESS >>

Atlanta, Georgia *Needham Heights, Mass.*



"Now that we have all the new auxiliary equipment and controls installed, there's no room left for the warp . . ."

You can run almost anything into the ground. We work hard on SEYCO auxiliaries, too, to improve them, but we are careful to maintain their original properties and the original SEYCO QUALITY.

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

Seyco Warp Lubricator.

Headquarters for textile chemicals

SEYDEL-WOOLLEY & CO.

748 RICE STREET, ATLANTA, GEORGIA

SEYCO

goes down, the builder motion winds back, and finally the entire frame stops, ready for doffing—all automatically.

Fitted with an extremely simple broken end motion operating after the feed roll, this twister is driven by variable speed motors which are located under the spindle beam and thus do not require any additional floor space.

The Hispano Suiza spindle is not rigid—it is self-centering. The helical driving gear and worm are separate elements, rigidly mounted, but entirely divorced from the flexibly mounted spindle blade. Vibrations, as well as axial and radial thrusts, originating from the gearing cannot be transmitted to the blade. The spindle always runs in dead center of the ring. There is freedom from vibration and absolutely no variation in speed from spindle to spindle. Hispano Suiza spindles are grouped as integral parts of sectional cast iron housings, which, assembled end-to-end, form the actual spindle beam of the frame.

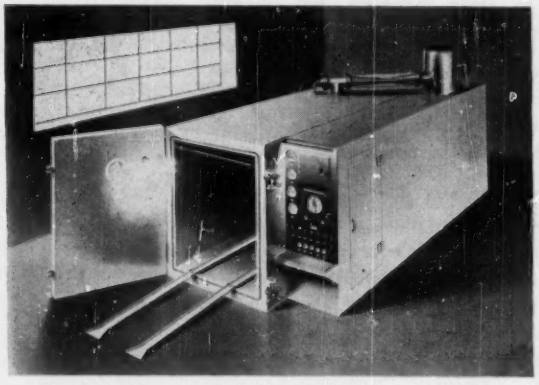
A fixed amount of lubricating oil for the spindles and the driving elements is maintained in the spindle beam. The oil is forced-fed to all gears and bearings, not splashed. The oil circulation is positive, but there is no emulsification of the oil.

Spindle Sales Corp., 385 Fifth Ave., New York, N. Y.

Do you want more data? Write ◂ or use card, p. 205; list M-116

New Vacuum Process Aids Textile Production

New techniques and equipment for processing natural and synthetic fibers by high vacuum and steam process permit close control over the physical properties of textile products. For example, by vacuum processing rayon bales, it is possible to control the percentage of moisture



regain. In addition, the process improves tensile strength, reduces difficulty with static conditions, and results in operating economy since more rayon tow can be packed in the cartons than with unprocessed rayon.

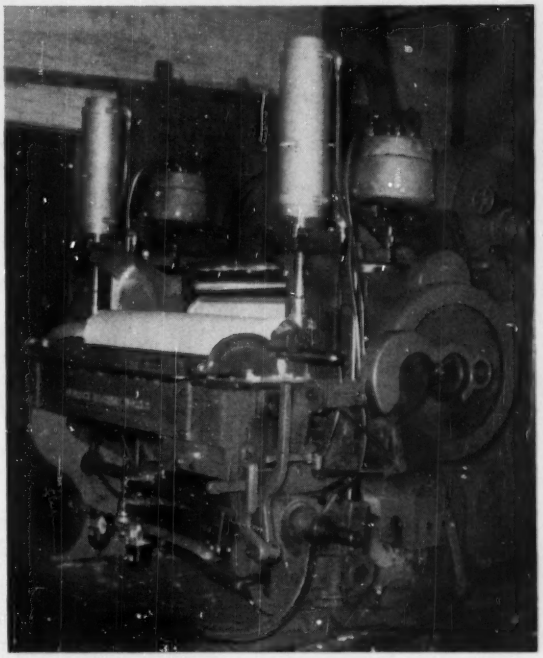
Other advantages attributed to vacuum processing include: uniform moisture content secured throughout the whole bulk package in short time; provides uniform moisture content in many textile yarns made up as cakes, cones, spools, etc.; facilitates shrinkage control and reduces amount of swelling of rayon on re-wetting; can be used for twist setting; enhances dye levelness by reducing strained condition of yarn; removes undesirable chemicals.

Vacuum Process Division, John Mohr & Sons, 3200 East 96th Street, Chicago 17, Ill.

Do you want more data? Write ◂ or use card, p. 205; list M-117

Increase Picker Production, Make Better Laps with this Pneumatic Control

The Long pneumatic lap control system for Kitson, Saco-Lowell, Whitin and other pickers features equipment for the application of equal pressure through air cylinders directly to each end of the lap pin and calender roll as well. Practically eliminating yard-to-yard variation



from the beginning to end of the lap, the system may be bought separately for the counter section, calender section or both.

Specific advantages to be derived by utilization of the equipment on the counter section are:

1. More production—permits greater yardage to be put on lap of same diameter;

2. Maintenance costs greatly reduced—eliminates 34 parts on friction type system, 28 parts on rack and pinion system;

3. Better quality control—an equal pressure is maintained on each end of lap pin at all times; consequently, a bad lap can be detected instantly (since one end will be larger than the other) and corrective action initiated;

4. Saves waste at cards—fast action plus full pressure on lap pin at start-up results in production of a lap that can be carded to within approximately 4" of the end;

5. Even let-off as lap is being made;

6. Doffing time reduced 25%—stepping on knock-off clutch lever automatically lowers the head blocks rapidly on the pin; when picker knocks off, roller head blocks automatically come off lap pin and raise to a retracted position until operator is ready to start next lap.

7. Loggerhead adjustment and breakage eliminated; also wear on lap pin;

8. Minimizes lap pin breakage.

Additional advantages to be derived by installation of the equipment on the calender section are:

1. More production—reduces even more the diameter of the lap, allowing more yards to be put on lap with same diameter (100-lb laps with approximately 21" diameter can be made); *(Continued on page 189)*

FROM WICA

The Truth about 'Wash and Wear'

The public wants more and more *wash and wear* fabrics. It's a dynamic, exciting concept, and the public is buying.

Like many other textile innovations, *wash and wear* has its pitfalls. The public welcomes freedom from the ironing board, but it doesn't want to be asked to wear shapeless, hot, clammy, baggy clothing.

There are right and wrong ways to give fabrics a *wash and wear* quality. No one "patent medicine" exists to do this job. There are no shortcuts, no absolutes in the *wash and wear* field.

Sound chemistry can solve any *wash and wear* problem. But the plain truth is, each fabric and each use is a separate problem. As a basic manufacturer of products required for *wash and wear*, Wica has seen *wash and wear* assignments for years in its own laboratories. Wica has licked every problem so far. May we do the same for you?

WICA

DIRECT INQUIRIES TO: WICA CHEMICALS, INCORPORATED • OLD CONCORD ROAD • CHARLOTTE, N. C.

2. Greatly reduces lap splitting at cards;

3. Provides maximum flexibility of operating pressures—any pressure up to 8500 psi can be applied to calender section by simply adjusting the self-relieving type regulator;

4. Maximum protection for calender roll section if choke-up occurs—because of compressibility of air in cylinders, a choke-up in calender roll section immediately knocks-off the picker.

Livingston & Haven, Inc., P. O. Box 808, Charleston, S. C.

Do you want more data? Write ◆ or use card, p. 205; list M-118

New Substantive Softeners

Three new substantive synthetic softeners offer the finisher a full range of ionic activity.

These materials do not discolor white goods or affect dyed shades appreciably. Minimum effect is shown on light fastness resistance, and the softeners are extremely resistant to high temperatures.

Wica Softener T-535 is especially recommended for use in resin baths and is highly compatible with the ordinary finishing materials encountered. T-535 is 50% active and cationic. Bath stability is excellent over a wide pH range.

Wica Softener A is a 50% active anionic finishing agent and is recommended for resin baths where metallic salts are employed as catalysts. Excellent penetration for high twist yarns and tightly constructed fabrics is offered.

Wica Softener N is a 50% active neutral softener.

Wica Chemicals Co., Inc., P. O. Box 506, Charlotte, N. C.

Do you want more data? Write ◆ or use card, p. 205; list M-119

Three-Way Knitting Feature of Electronic Seamless Hose Machine

A new model of the Fidelity "400" electronic seam-free hosiery knitter that can be changed from plain to mesh or stretch fabric in a matter of minutes has been placed on the market.

The machine employs "a new patented principle, not simply an attachment but an integral part of the machine." The new development will allow manufacturers tc make their hosiery production as flexible as changing market conditions. At the push of a button top quality plain, mesh, or stretch ladies' hosiery can be produced.

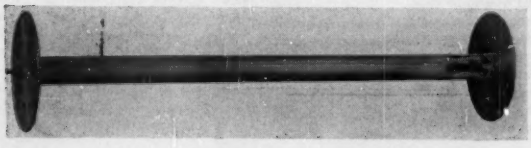
Fidelity Machine Co., Inc., 3908-18 Frankford Ave., Philadelphia, Pa.

Do you want more data? Write ◆ or use card, p. 205; list M-120

Jack Spool Is Indestructible

The Flex Spool is a lightweight, rustproof, all-aluminum jack spool.

Available with 9 and 10 inch heads in both corrugated and slotted models, the device takes its name from its built-in spring flexing device. Exhaustive field tests have shown that the spool is practically indestructible, since it is designed to allow the head to flex and not break when thrown or dropped. Spool maintenance costs are also eliminated because the Flex Spool will not warp or splinter and has no nuts, bolts, and washers to work loose.



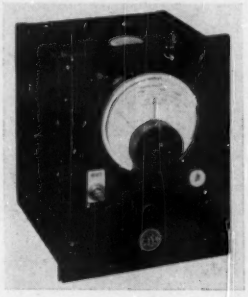
Also available from this manufacturer is an aluminum cloth roll featuring both internal and external locking that keeps parts from working loose. It requires no maintenance, is knurled to prevent slipping, and will not warp, split or mark the cloth.

Thomas Leyland Co., Inc., subsidiary of James Hunter Machine Co., Readville, Mass.

Do you want more data? Write ◆ or use card, p. 205; list M-121

Equipment Briefs

Operating on a current of less than 1 microampere, a new **temperature-indicating, electronic, contact-controller** automatically holds and controls process temperatures as high as



2500 F to within plus or minus 1% of scale. Called the AIC Indicator/Controller, Model PB, it provides both straight cut-off and simple on-off control as required for furnaces, ovens, tanks, etc.

Automation Instrument Corp., 1516 Summer St., Philadelphia 2, Pa.

Write ◆ or use card p 205; list M1

Adapt microscopes of all makes for fluorescence microscopy with "Fluorex" equipment which includes a 200-watt mercury vapor arc burner for weakly fluorescent materials at high magnifications and an 80-watt mercury arc vapor lamp for highly fluorescent materials at medium to low magnifications. A micro-camera for black and white and color photography is also available. The equipment can also be used for micro fluorescence analysis without a microscope. Lamps are quickly interchanged. Exposure time for photography is substantially reduced.

William J. Hacker & Co., Inc., 82 Beaver St., New York 5, N. Y.

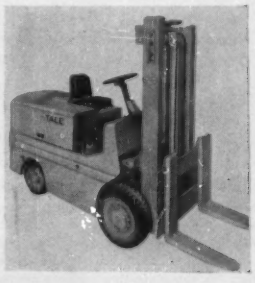
Write ◆ or use card p 205; list M2

Eleven new colors of Jetspun solution-dyed filament rayon yarn are available, having been designed specifically for home furnishings fabrics — copper, rose, sea blue, laurel green, bark brown, ruby red, hemlock green, toast, dusty pink, old gold, reseda green, and pewter grey.

American Enka Corp., 206 Madison Ave., New York, N. Y.

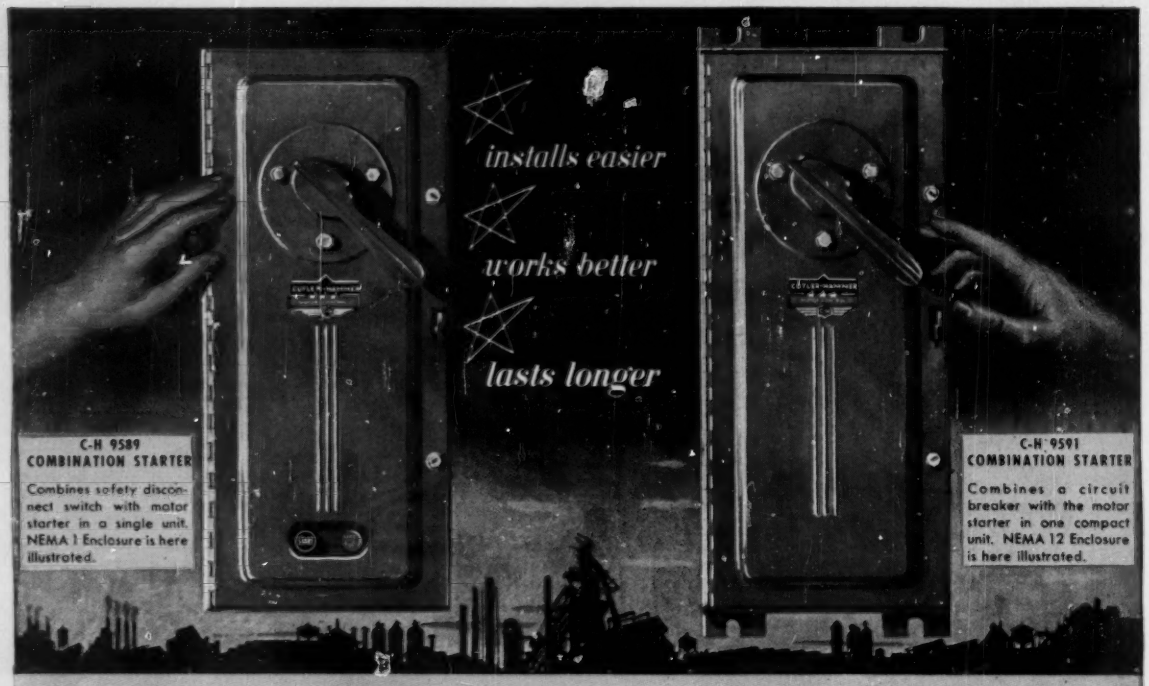
Write ◆ or use card p 205; list M3

New **lift trucks featuring fully automatic gear shifting** permit smoother materials handling with greater operator comfort and safety. The new KGA51 line of gas, diesel, and LPG powered lift trucks range



in capacity from 3000 to 8000 lb. The fully auto-

New Cutler-Hammer Three-Star Combination Starters offer industry important new economies

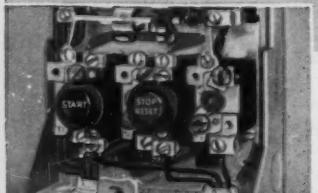

installs easier
works better
lasts longer
C-H 9589
COMBINATION STARTER
Combines safety disconnect switch with motor starter in a single unit. NEMA 1 Enclosure is here illustrated.
C-H 9591
COMBINATION STARTER
Combines a circuit breaker with the motor starter in one compact unit. NEMA 12 Enclosure is here illustrated.

Convenience and economy are basic advantages of combination starters. Users everywhere say the new Cutler-Hammer ★ ★ ★ Combination Starters bring these basic advantages to new high levels of importance. Contact life is so amazingly improved that maintenance care is *never* needed in all normal uses. Adjustable load sensing coils permit motors to work at top capacity without hazard to provide maximum production without needless work interruptions. And the widely praised Cutler-Hammer exclusive, full three-phase overload protection in standard combination starters, is optional at slight additional cost.

The three silver stars stand for three new standards

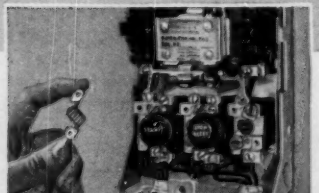
CUTLER-HAMMER
★ ★ ★
MOTOR CONTROL
C-H

Compare the performance and economies of these remarkable new Cutler-Hammer Three-Star Combination Starters with any you have ever known. Cutler-Hammer Bulletin 9589 Combination Starters incorporate rugged disconnect switches of advanced design (fused or unfused). Cutler-Hammer Bulletin 9591 Combination Starters are equipped with circuit breakers. Your nearby Cutler-Hammer Authorized Distributor is stocked and ready to serve you. Order from him today.
CUTLER-HAMMER, Inc., 1456 St. Paul Avenue, Milwaukee 1, Wisconsin.



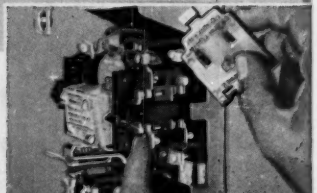
Full Three-Phase Protection

Only *three* overload relays can give complete three-phase protection to avoid motor burn-outs and their costly interruptions to production. And *only* Cutler-Hammer offers this complete three-phase protection in standard combination starters. You pay only for the third relay, nothing extra for special engineering or special enclosures.



Adjustable Load Sensing Coils

The accurate adjustment of overload protection permits motors to work harder without damage to motor windings. This is more important than ever with the newer type small frame motors. Adjustable load sensing coils in these new starters provide 3% loading accuracy instead of the 10% to 12% accuracy in competitive control.



Superlife Vertical Contacts

Experienced control users insist on dust-safe vertical contacts. And now the famous Cutler-Hammer vertical contacts have been doubly improved. First, their new lightweight design cuts bounce to reduce arcing. Second, any arcing that might occur is now pressure-quenched. Compare performance and see the difference.

matic torque transmission cannot become overheated and whole unit can be removed from truck without disassembly. Other features: inching control, dual brake pedals, good visibility.

The Yale & Towne Mfg. Co., Materials Handling Div., 11,000 Roosevelt Blvd., Philadelphia 15, Pa.

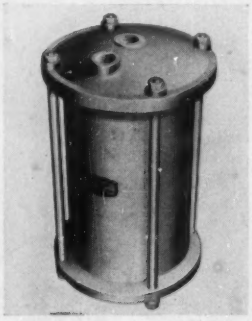
Write ☛ or use card p 205; list M4

Substantial savings in creeling costs, higher quality, and more uniform tension throughout the cone are benefits to be derived by weavers and knitters who use the new **6-lb acetate yarn cone** now available. Savings in warping can amount to as much as 26%; in backwinding and redrawing, as high as 15-20%; in quilling, 3.5%. Quality-wise, there will be fewer knots and a resultant reduction in the number of breaks which occur at the transfer in cone packages; also reduction in knots in yarn on section beam.

Celanese Corp. of America, 180 Madison Ave., New York 16, N. Y.

Write ☛ or use card p 205; list M5

Positive protection to all types of pneumatic equipment, more efficient operation of equipment, less downtime, and much longer equipment life are results of the use of a new line of "Super Clean" **air filters** designated Series 350. Remove all trace of oil

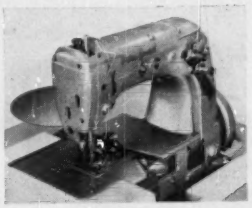


and oil vapors, all solid particles over 3 microns in size, odors and fumes, and moisture. Units will absorb large quantities of contaminants before filter need be changed. Replacement of filter is a quick and easy procedure.

Wilkerson Corp., Englewood, Colorado.

Write ☛ or use card p 205; list M6

A **single needle machine for simultaneous trimming, seaming, and binding operations** on light and medium weight materials is designated Style 51200 BB. Features a frong chip dis-



posal and improved accessibility to the looper by the throw-out features of the knife, the binder, and the chip guard. Threading is made easier by looper breakdown connection, and machine utilizes compensating type presser foot which is self-equalizing for various weights of material and binding.

Union Special Machine Co., 400 N. Franklin St., Chicago 10, Ill.

Write ☛ or use card p 205; list M7

For use in the 25-50 hp range with both the old and newly re-rated NEMA frame sizes is a new H Style 1000 Series **magnetic brake** which develops higher torque and yet takes up less space. Two sizes are available which are rated at 125 lb ft and 175 lb ft torque. Brake may also be supplied for floor mounting.

Stearns Magnetic, Inc., Milwaukee 46, Wis.

Write ☛ or use card p 205; list M8

Quickly detachable, safety type valve couplings, designated "Quick-A-Wink," lock in either "on" or "off and exhaust" position. They exhaust air from tools automatically to permit tools to be changed quickly and safely. Free swiveling of coupling in use prevents hoses from kinking. Available in ¼", ⅜" ½", and ¾" sizes—for line air up to 250 psi. Any size valve half can be connected to any size connection half.

C. B. Hunt & Son, Inc., Salem, Ohio.

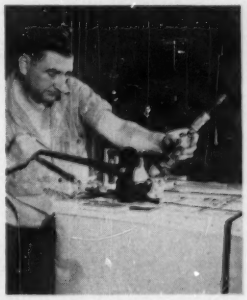
Write ☛ or use card p 205; list M9

A new **direct reading humidity and temperature indicator** called the Model No. 187 Hygrodial shows at a glance the relative humidity and temperature of the air to which it is exposed. Simple, trouble-free, and dependable. Has base for standing on desk or table and also has provision for wall mounting.

The Abbeon Supply Co., 179-15 Jamaica Ave., Jamaica 32, N. Y.

Write ☛ or use card p 205; list M10

Skid and pallet loads may be strapped rapidly and efficiently with an **air-powered strapping machine** that automatically tensions steel strapping and then seals and cuts it off in two easy motions. This semi-automatic power-driven Model AP tool speeds the



entire operation by eliminating the major cause of operator fatigue. Provides uniform, predetermined tension. Designed for use with ⅝" and ¾" Signode steel strapping.

Signode Steel Strapping Co., 2600 North Western Ave., Dept. 9P, Chicago 47, Ill.

Write ☛ or use card p 205; list M11

A new line of **power dumping devices for barrels, bags, boxes, trucks,** or any type container consists of three basic models: Model 54 is for front dumping and is applicable only for loads up to 750 lb and lifts up to 8 ft; Model 36 is for front dumping for loads over 750 lb and any dumping heights; Model 32 is for side dumping and is capable of handling loads from 2000 lb up and any dumping heights. Machines raise containers, turn to any desired dumping angle, and discharge contents without spilling into any type receptacle at any desired height. Any cycling can be furnished from complete control by operator to complete control by machine with a very minimum of manual labor.

Langley Mfg. Co., Inc., 920 Cambridge St., Cambridge, Mass.

Write ☛ or use card p 205; list M12

A new line of **lightweight "Texlite" sheaves** for fractional horsepower and light duty industrial drives includes single groove sheaves in both bushed and bored-to-size construction with "A" section grooving or combination "A-B" grooving.

Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.

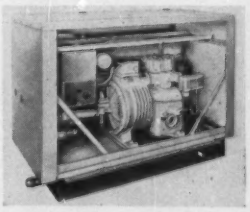
Write ☛ or use card p 205; list M13

An aerosol-dispensed **cleaner for deep-pile synthetic fabrics** which simulate fur has been introduced. Called "Fur Frost," it is applied by simply spraying the product onto the fabric, wiping the fabric with a clean cloth, and finally brushing and shaking the fabric. Non-inflammable, non-toxic, and safe.

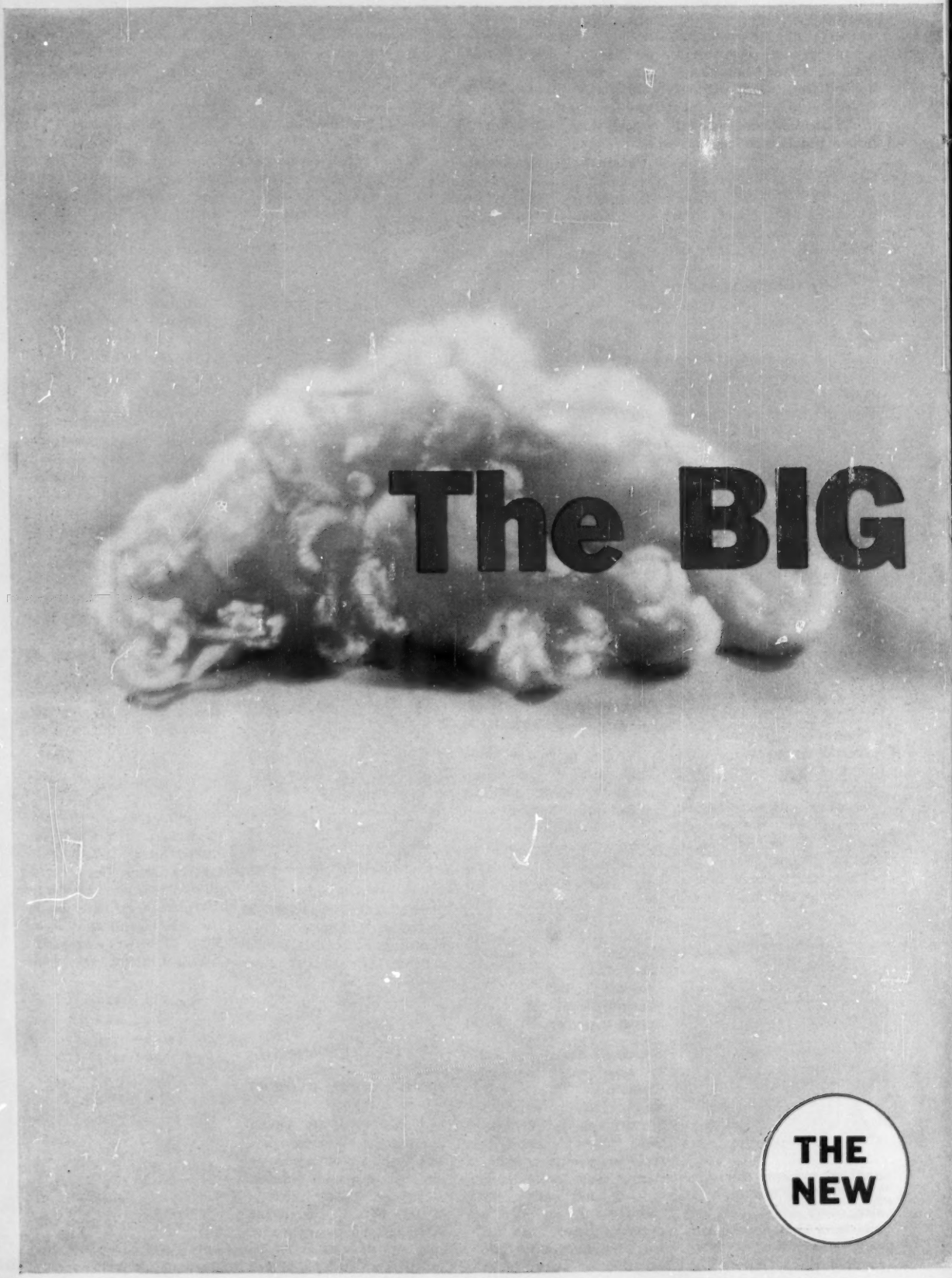
White Frost Chemicals, Inc., 41 West 58th St., New York, N. Y.

Write ☛ or use card p 205; list M14

Designed for easy installation and servicing is a new **packaged water and liquid chiller** for air condi-



tioning and industrial applications. It comes com-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NEW

- **BRIGHTER LUSTER**
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- **BETTER CRIMP**
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A great new fibre capable of giving your product seven unique, highly desirable qualities has been developed. It is the NEW Nylon Staple, produced by IRC.

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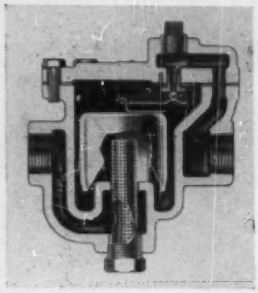
pletely enclosed in an insulated cabinet. Available in sizes ranging from 3 to 15 hp, the unit is recommended for chilling dye-baths, drinking water, etc.

American Coils Co., 360-64 Thomas St., Newark 5, N. J.

Write ☁ or use card p 205; list M15

The high discharge capacities of the new Sarco type B **inverted bucket steam traps** are made possible by the use of large



valves operated by a cam-lift valve mechanism. Retains prime under most difficult operating conditions — light loads, rapid pressure drops, and partial vacuum in the return line caused by night shut-downs. Camlift mechanism provides force needed to open the large valves against steam pressure without making traps bulky and also insures quick opening to prevent partial water logging of the unit being drained.

Sarco Co., Inc., Empire State Bldg., New York 1, N. Y.

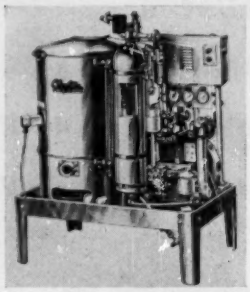
Write ☁ or use card p 205; list M16

Designed especially for high maneuverability, ease of maintenance, and increased operator comfort and convenience is a new line of **electric fork trucks** with 3000, 4000, and 6000-lb capacities. The Model FT line trucks also feature high stability, increased width, and low overhang. They have no cowl so operator can easily get on and off trucks; also he can more easily see the load and floor immediately ahead.

Baker - Raulang Co., Cleveland 2, Ohio.

Write ☁ or use card p 205; list M17

Occupying less floor space than a stenographer's desk, the new Clayton **15 hp forced recirculation steam generator** with balanced feed is recommended



for applications requiring a small volume of steam. Water entering coils is preheated and simultaneously freed of much of its mineral content so that operating efficiency is increased while scaling is avoided. Other features: automatic blow-down, low price, low fuel consumption, thermostatically controlled.

Clayton Mfg. Co., El Monte, Calif.

Write ☁ or use card p 205; list M18

A low-cost **tension regulating drive for center winding** a wide variety of materials without any physical tie-in between the main machine and the winding section is called the Reliance VS-100 Drive. Capacity at constant tension is from ⅛ to 2 hp with the exact limits being a function of line speed, build-up, and tension. For special winding requirements, on applications such as inspection tables, the drive can be modified to provide extremely close speed regulation (by tachometer feedback). The addition of an amplifying section on a "building block" basis converts the basic panel into a pre-

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FACTORS

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Murray Hill 3-4141

cision regulator.

Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio.

Write ◆ or use card p 205; list M19

A new **electrical foot switch** operates no matter how it is pushed to start and stop production machinery requiring fast, safe

switching. It makes positive contact when pushed on top or anywhere on its circumference, and can also be activated with hand, elbow, or knee.

The Birtcher Corp., 4371 Valley Rd., Los Angeles 32, Calif.

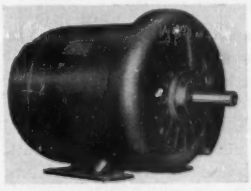
Write ◆ or use card p 205; list M20

A **convenient package of machine-y mounting material** which requires no bolting or cementing is announced. Called "Packaged Flats," the unit consists of one 9" x 18" sheet of Air-Loc machinery mounting material and one sheet of Air-Loc SL shim holding material.

Clark, Cutler, McDermott Co., Franklin, Mass.

Write ◆ or use card p 205; list M21

A **½ hp totally enclosed, fan cooled electric motor** recommended for use in dirty, dusty, fume and mist-laden atmospheres



that could damage an ordinary motor is available. Features include: practically indestructible aluminum rotor with skewed laminations; ventilating fan integrally cast with rotor, acts as rotating seal, provides same efficient cooling when operated in either direction; "six layer insulation" for stator windings.

Century Electric Co., 1806 Pine St., St. Louis, Mo.

Write ◆ or use card p 205; list M22

A new series of **moisture discharging separators for compressed air equipment** operating between 10 and 250 psi is on the market. Units operate efficiently and economically wherever air demand is intermittent. Known as Series 125, the piston operated devices do not increase air requirements and will not flutter. Action is fully automatic in the separation and discharge of free oil, water, and non-gaseous contaminants as air is used. Four models are offered, serving ¼" to ½" lines.

Wilkerson Corp., 3381 South Platte River Dr., Englewood, Colorado.

Write ◆ or use card p 205; list M23

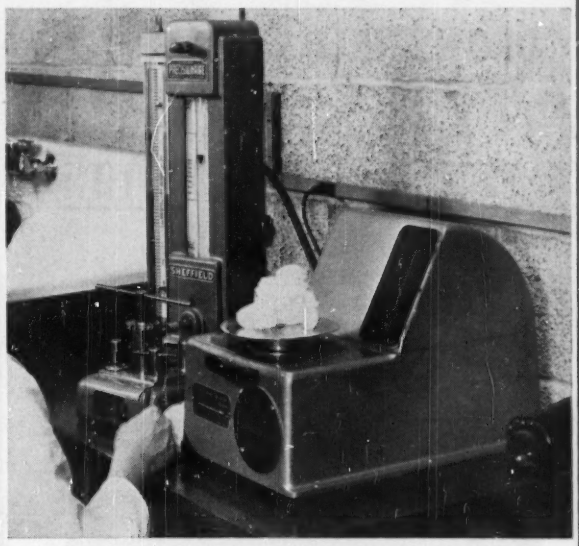
Unexcelled maneuverability in narrow warehouse aisles is provided by the Hyster HC-50 **lift truck,** a compact 5000-lb unit. Its

short length, narrow width, and ease of steering contribute to faster on-the-job output. Weighs only 7110 lb, permitting operation on lighter weight floors. Low center of gravity and comparatively long wheelbase are design qualities which improve traction, weight distribution, and operating ease.

Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore.

Write ◆ or use card p 205; list M24

A new **machine for imprinting codes and product information on flat box** ends to distinctly aid identification and inventory operates at a speed of 30 impressions per minute,



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assures accuracy in MICRONAIRE test

This scale is precision designed for weighing samples in conjunction with the Sheffield Micronaire testing machine. Extreme accuracy, plus greater speed and easy-to-read shado-edge indication has made it the choice of cotton shippers, brokers and mills both here and abroad. Indication by a shadow line is projected on an illuminated dial. You avoid the possibility of parallax readings. Friction of indicating mechanism is eliminated. Short lever fall together with hydraulic damping action assures an always fast and accurate weight measurement. Dial is graduated with 1" of indicator travel equal to 15 grains, over and under. Scale does not require leveling—can be used in any location.

SHADOGRAPH
MODEL 4104-A

Write for descriptive folder.

Exact Weight scales also available for color control, slashing, sliver test, yarn count, quality control, denier testing and check weighing. Sales and service coast to coast.

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- securely sewed laps
- any desired color
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- fast-to-light, non-fading dyes
- easily recognized at a distance
- easily removed and transferred

If you will specify the can diameter; and the color, width and quantity of bands desired; we will submit samples and quote prices.

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utilizing a heat transfer dye process. It provides a complete built-in set of numbers and letters that are quickly and easily arranged by the operator to meet any combination requirement. A variety of colors can be used, and legibility of imprint is outstanding. Recommended for marking hosiery boxes, etc.

Industrial Marking Equipment Co., 454 Baltic St., Brooklyn 17, N. Y.

Write ◀ or use card p 205; list M25

A compact automatic lubricator with a close-fitting ratchet drive provides **centralized lubrication on small machines** where a minimum of installation space is available. The cyclic type lubricator, designated NV, will feed controlled amounts of oil to as many as 25 bearing points on a machine—i.e., circular knitting machines, testing machinery, etc. Powered by machine it lubricates.

Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J.

Write ◀ or use card p 205; list M26

Designed for service in sewage disposal plants, utility and water works, etc., are **moderate speed, 4-cycle, heavy duty diesel, dual fuel, and gas engines** with ratings up to 1400 hp. Most modern and unique feature of the W9 line is "Jet-Swirl" turbocharged power. This is a streamlined design for air inlet which brings the air in parallel to the inlet valve stem and gives it a swirl as it enters the cylinder. This feature allows ramming larger and more turbulent air charges into the cylinder, giving cleaner and more complete combustion.

Worthington Corp., Harrison, N. J.

Write ◀ or use card p 205; list M27

A low cost **hand tachometer** gives continuous indication of speed. Stop button makes it possible to retain dial reading until button is released — an advantage when taking readings in difficult places or where a second person wishes to check the reading. Models are available in seven speed ranges—from 50 to 10,000 rpm or 25 to 5,000 fpm. Indicates regardless of direction of rotation without adjustment.

Jones Motrola Corp., 432 Fairfield Ave., Stamford, Conn.

Write ◀ or use card p 205; list M28

A new **hand grease gun filler pump** designed to handle medium as well as light greases attaches to any 25-50 lb original refinery container by means

of three thumb screws. Fills one-pound capacity gun in only 30 seconds. Eliminates contamination, air-pockets, and disagreeable mess of hand-filling methods.

Lincoln Engineering Co., 5702 Natural Bridge Ave., St. Louis 20, Mo.

Write ◀ or use card p 205; list M29

A complete line of easily maneuverable **in-plant fire trucks** is designed to carry a wide assortment of fire fighting equipment and is especially adaptable to the needs of plant fire brigades. Available in six basic models, including the KB 8 Model which features a 300-lb dry chemical unit backed up by a 150-gallon water fog system.

Ansul Chemical Co., Marinette, Wis.

Write ◀ or use card p 205; list M30

A **multi-purpose concrete sealer-finish,** called Conqr-Dust, is for use on uncured concrete and other masonry-type floors. Positively eliminates dusting on concrete floors and

makes sweeping and other care easier. No floor neutralizing is necessary when used on uncured concrete. Dries in 20 to 30 minutes and can be maintained by mopping with a weak cleaning solution. Apply as comes from container. Water resistant; gloss improves appearance of floor; wax or paint can be applied over it; resilient floors can be laid over it; slip-retardant; no odor; and nearly colorless.

S. C. Johnson & Son, Inc. Carnu St., Racine, Wis.

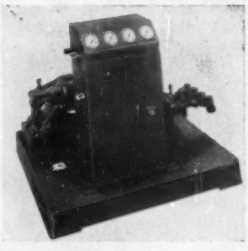
Write or use card p 205; list M31

Gasoline - engine - powered fork lift trucks, power sweepers, and other in-plant vehicles can be operated with greater safety in enclosed plant areas by utilizing an **exhaust purifier** now available. Called the Oxy-Muffler, it eliminates by catalytic burning as much as 90 per cent or more of the carbon monoxide and most of the aldehyde and hydrocarbon fumes in engine exhausts. Effective with leaded as well as unleaded fuels.

Oxy-Catalyst, Inc., Wayne, Pa.

Write or use card p 205; list M32

A new **controlled volume pump** with instrument air stroke length adjustment



has recently been made available for use in pneumatic process control systems. Designed to solve specific low capacity flow control problems, the new pump utilizes a unique air servo system with feedback loop to give capacity adjustment with an accuracy within 1%.

Milton Roy Co., Station N, 1300 E. Mermaid Lane, Philadelphia 18, Pa.

Write or use card p 205; list M33

For moderate counting duty, on many applications where extremely long life is not required, the Series 1507 **reset magnetic counter** was developed. Compact and easily connected in series with any device having a contact arrangement, the counter may be actuated by any type of switch, relay, or photoelectric unit. Maximum recommended speed is 700 counts per minute.

Veeder-Root Inc., Hartford 2, Conn.

Write or use card p 205; list M34

A new **nylon thread** is especially recommended for fabrication of items subject to outdoor exposure, such as tarpaulins, because of its outstanding resistance to weather degradation and abrasion. Called Nymo UVR, it incorporates special finishes that "screen out" ultra violet rays in much the same manner as sun tan lotions protect the human skin.

Belding Corticelli, 350 Fifth Ave., New York 1, N. Y.

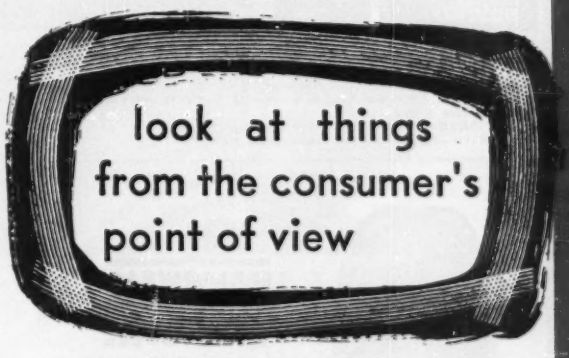
Write or use card p 205; list M35

Designed especially for servicing bearings requiring large quantities of lubricant are two new **lever type grease guns** that will deliver .17 oz per stroke of No. 1 cup grease at 70 F. Capacity of guns is 21 oz of lubricant; they develop 2,500 psi maximum pressure with ease.

Lincoln Engineering Co., 5702 Natural Bridge Ave., St. Louis 20, Mo.

Write or use card p 205; list M36

Ideal for glazing factory and shop windows where pane breakage is high because of severe vibration, concussion, flying objects or intermittent radiant heat are **translucent Resolite flat panes** which are made of fiberglass-reinforced polyester resins. Unaffected by weather extremes or unusual industrial fumes, they are shatterproof and crackproof. Transmit almost as much light as clear glass—a softer, more diffused light. Glass fibers deflect light rays and spread a uni-



There's no getting around the fact that the ultimate prosperity of the textile market rests on Mr. and Mrs. Consumer.

Though the average housewife may not know the technical terms concerning the wet processing of cloth, you can bet your last dye beck she knows a good finish when she sees it. *Look at your finishes from her point of view.*

Here's where BURKART-SCHIER comes in. BURK-SCHIER penetrants, detergents, softeners, repellents and finishes are the finest wet processing agents that money can buy.

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And these precision-machined solid steel collars stay put because they are held in place on the shaft by the famous UNBRAKO Self-Locking Socket Set Screw. Authorized industrial distributors carry complete stocks in sizes from 3/16" to 3" inclusive. Write for Bulletin 868. STANDARD PRESSED STEEL Co., Jenkintown 34, Pa.

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form, glare-free, tinted light over an entire area; reduce eyestrain, increase personnel efficiency. Also available for use where codes call for a flame spread rating below 75 or where fire hazard is severe are **"Fire-Snuf" panes and panels;** labeled by Underwriters' Laboratories; retain all characteristics of standard Resolite, but manufactured with resins which will not support combustion.

Resolite Corp., Zelienople, Pa.

Write ◀ or use card p 205; list M37

A new **level controller** that combines the advantages of both electronic and air pressure control instruments is available. Called the "Pneutronic" level control, it utilizes the accuracy of electronic capacitance sensing elements to detect minute changes in levels in tanks, drums, process baths, pipelines, and other conveyors. Electronic signals are then converted by the apparatus into proportional pneumatic output which is sufficiently powerful to operate control valves and other pneumatic control equipment.

Fielden Instrument Div., Robertshaw - Fulton Controls Co., 2920 North Fourth St., Philadelphia 33, Pa.

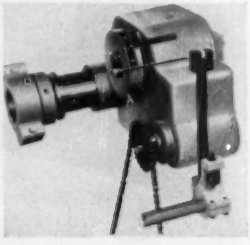
Write ◀ or use card p 205; list M38

Dixon Aqua-Bond, a **coating specifically formulated for application to damp surfaces** and surfaces where moisture is a problem, allows moisture vapors to escape through the film without blistering. At the same time it prevents the passage of moisture through the film from the outside. The coating is non-flammable and has excellent resistance to fumes, ultra-violet rays of sun, acids, lime, alkali, moisture vapors, and mildew. It is also non-chalking and odorless. Always remains flexible. Apply by brush, roller, or spray over the following dry or damp surfaces, either interior or exterior: concrete, brick, masonry, wood, plaster, metal.

Joseph Dixon Crucible Co., Jersey City 3, N. J.

Write ◀ or use card p 205; list M39

Let-Off for Flat Knitters Controls Runner Length to within 1/4 of 1%



The "Clentimack" let-off, a compact unit which can be applied to all models of flat knitting machines with little or no change to existing equipment, controls runner length to within ¼ of 1%, provides constant tension control from full to empty beam, reduces maintenance, eliminates shade marks, cuts waste, permits increased knitter speeds, improves quality, and reduces needle breakage.

Fully automatic, the device operates this way:

The let-off is set to the desired yarn tension and from this point on it automatically compensates for any increase or decrease in yarn tension. Individual, counter-rotating ratchet wheels operate independently as one or the other is engaged by the indicating pawl. If the tension is too great, the fast ratchet wheel is engaged and automatically repositions the control to zero; the opposite occurs when the tension is too light. When the zero position is maintained, neither pawl can engage its ratchet wheel as both rest on a shield which only frees a pawl if the fly-

wheel moves to plus or minus.

George E. Clintimack Co., Inc., 229 West St., North Attleboro, Mass.

Do you want more data? Write ◄ or use card, p. 205; list M-40

New Printing Colors Eliminate Acid Aging

Atlantic Neutrazoics, new stabilized azoic dyestuffs which completely eliminate the need for acid aging when printing rayon and cotton, have been announced.

The colors are naphthol-salt combinations which are stabilized through the use of new compounds, and which develop in neutral steam.

The range is extremely flexible and may be printed alongside pigment, vat, and soluble vat colors without changing formulations, and furnishing the same deep shades and strength as ordinary stabilized azoic colors. Formulations for printing require no more time or effort than is customary with ordinary stabilized azoics.

The range is fast to boiling, washing, chlorine, and light. Other features include extremely low print cost, the elimination of corrosion and costly chemical assistants, and the elimination of unpleasant odors and civic nuisance.

Atlantic Chemical Corp., 153 Prospect St., Passaic, N. J.

Do you want more data? Write ◄ or use card, p. 205; list M-41

Yarn Tinting Device for Abbott Quillers

A new tinting device is available for both types of Abbott quillers—the radial type as well as the in-line type.

The tinting device for the radial type automatic quillers is easily applied to the machine, operates on the end opposite the quill hopper, and gets its driving motion from the boarding device.

The tinting device for the in-line type quiller, also easily adapted, gets its driving motion through a cam action that is activated by a stud on each of the individual spindles on the machine.

Both incorporate the use of felt wicks, and one or more than one color of tint can be used at the same time by the same tinting device.

Louis P. Batson Co., P. O. Box 772, Greenville, S. C.

Do you want more data? Write ◄ or use card, p. 205; list M-42

Air-Operated, High-Vacuum, Industrial Cleaner

"Vac-U-Max" is the new, powerful-suction, modern industrial vacuum cleaner that operates by use of compressed air only. Compressed air passed through a jet-venturi creates a very high vacuum.

Connected to existing compressed air lines found in most mills, the unit develops more than two times the suction of a standard one hp electric unit that is equivalent in size.

The machine has no electrical connections, no motor, no bearings or moving parts; therefore, it requires no maintenance. Being non-electric, there is no explosion hazard or other electrical danger. It is as dependable in operation as the compressed air system in a plant.

In the textile mill the device has many applications. In

The BEST is Always a BARGAIN

Lane Style 34 STEAMING & CONDITIONING BASKET

For a long-wearing steaming and conditioning basket, to stand the rough conditions in your mill, insist on the Lane Style 34. The tough, snag-proof body, built over a strong, resilient frame, gives low-cost, dependable service because of these exclusive Lane features:

- Lane quality duck body for strength, durability.
- Brass grommets throughout body permit thorough conditioning.
- Light, strong frame of special non-rusting spring steel provides phenomenal resistance to permanent bending.
- Non-warping, close-grained hardwood shoes braced by rounded cross boards, double riveted for extra strength.
- Twelve standard sizes to meet every requirement.

To be SURE of the best, INSIST ON LANE Style 34 Steaming & Conditioning Basket

Write for information. 1113

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Lane

W. T. Lane & Bros., Inc., Poughkeepsie, New York

STAINLESS STEEL
SMALL WARE
FOR THE DYEHOUSE
Ruggedly Built for
SEVERE SERVICE

Welded, reinforced construction gives Blickman small ware extra durability to withstand hard daily use in the busy dyehouse. For sizes and specifications send for our small ware circular.

STAINLESS STEEL PAILS
Built to take a beating. Welded construction for extra strength. Round corners for easy, thorough cleaning. Made of #18 gauge stainless steel for corrosion resistance. Ears are formed under rolled rim of the pail and transmit part of the load to the rim. Capacity to 20 quarts. Write for Bulletin 7028.

STAINLESS STEEL BUCKETS
Easy to clean. For extra strength quarter inch thick reinforcing bands are welded at top and bottom. Handles of ½ inch diameter mild steel rod are welded to upper reinforcing band. Round corner bottom speeds cleaning. Built of heavy gauge stainless steel. Capacity to 100 gallons. Send for Bulletin 7029.

STAINLESS STEEL DIPPERS
Made to withstand rough handling. Hemispherical bowl of #16 gauge 18-8 stainless steel with #16 gauge stainless tapered handle-socket welded on. Capacities 1 pint to 4 quarts. Handle of 4 quart size reinforced. Send for Bulletin 7030.

Write for further information

S. BLICKMAN, INC.
212 GREGORY AVE.
WEEHAWKEN, N. J.
Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, rolls, hoods, tanks.

the picker, carding, drawing, spinning, and weave rooms its greater suction makes it possible to pick up and collect lint, fly, and waste efficiently. In this application, the waste is collected in a reusable burlap bag within the container, ready for delivery to the waste house. It eliminates the hazard of contaminating the sliver, yarn or material of one fiber with fibers of a different type.

The cleaner is low in initial cost, efficient in operation, and savings resulting from its use will pay for the investment in a short time.

American Balmes Corp., 859 Summer Ave., Newark, N. J.

Do you want more data? Write ◂ or use card, p. 205; list M-43

Bleaching Additive Inhibits Odor and Corrosion

X-Tan-Assist is a new bleaching and stripping additive that inhibits corrosion and odor caused by sodium chlorite and increases its bleaching effectiveness by as much as 50%.

By controlling the formation of chlorine dioxide gas to the rate at which it is used up in bleaching, this additive inhibits undesirable effects from excess gas and at the same time reduces consumption of sodium chlorite by ⅓. The product also lessens surface tension of the bleaching bath, resulting in a more uniform bleaching action, and stabilizes any pH on the acid side.

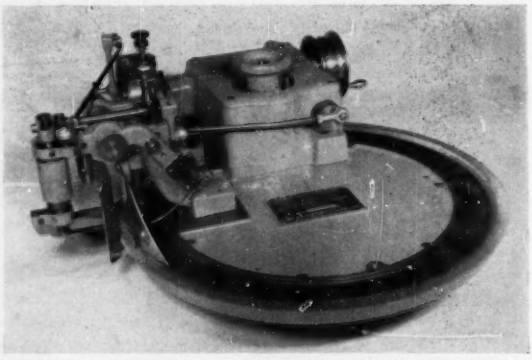
The Tanatex Corp., Belleville Turnpike, Kearny, N. J.

Do you want more data? Write ◂ or use card, p. 205; list M-44

Now Loop Collar onto Sweater Body with One Continuous Looping Seam

The new Hepworth Model ST sweater looper is a single needle machine.

The sewing mechanism is on the left side. After the



fabric passes through the sewing needle, a stripper guide strips the fabric off the dial points. With this arrangement it is possible to loop a collar onto the body of a sweater with one continuous looping seam after the shoulder seams have been closed.

The points in the looper dial are made of stainless steel. This eliminates the problem of how to keep the points of the looper dial from rusting due to high humidity, acid perspiration, etc.

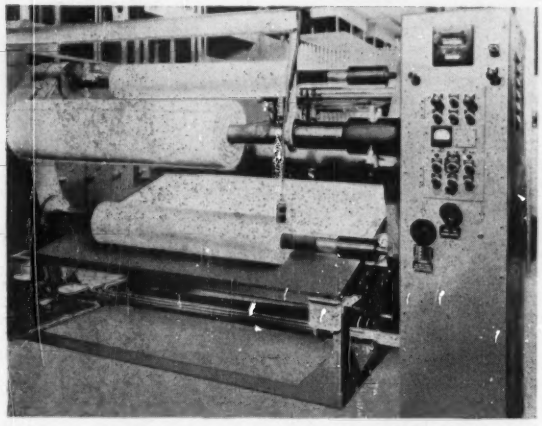
John W. Hepworth & Co., Inc., Corner Lehigh Ave. and Mascher St., Philadelphia 33, Pa.

Do you want more data? Write ◂ or use card, p. 205; list M-45

3-Shaft Turret Winder Cuts Winding Costs

A new three-shaft turret winder for in-line continuous production has been announced.

Named the Hobbs-Alquist three-shaft turret winder, the machine is designed to take a web from a previous con-



tinuous process and wind it continuously under controlled tension to rolls of a predetermined diameter (up to 36"). The continuous operation feature reduces winding costs, since there is no production loss during changeover. Uniformity of tension eliminates web distortion and sloppy rolls, thus increasing the salability of the finished rolls.

The machine has three arbors, all of which can be electrically clutched to the same Alquist controlled-tension drive. There is an arbor for the winding position, doffing position, and reserve position. As the predetermined build-up on the winding arbor is reached, the cycle commences and the winding arbor automatically moves to the doffing position, while the other arbors move to the reserve position and the winding position.

Hobbs Manufacturing Co., 353 Salisbury Street, Worcester 5, Mass.

Do you want more data? Write ◆ or use card, p. 205; list M-46

Durable Wrinkle-Resistant Finish for Cotton, Rayon, Nylon Fabrics

"Redi-Set," a new finish for cotton, rayon, nylon, or any type of mixture with these fibers, gives fabrics wrinkle-resistance, stretch-resistance, and shrink-resistance not previously attainable. Completely durable, it is washable up to 160 F or dry-cleanable. Fabrics treated with "Redi-Set" require little or no ironing after washing.

"Redi-Set" is being used in the children's, women's, and men's ready-to-wear industry, and fabrics so treated will carry the "Redi-Set" hang tag.

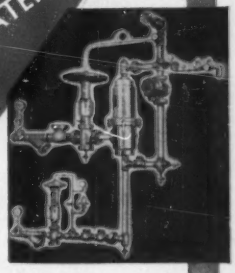
Northern Dyeing Corp., Washington, N. J.

Do you want more data? Write ◆ or use card, p. 205; list M-47

Ball Bearing Burrs for Spring Needle Knitters Require No Lubrication

A new ball bearing burr for spring needle knitting machines allows much freer motion of the burr with little or no wear, eliminates oil stains on the fabrics produced, and reduces downtime since the sealed ball bearings re-

Insist on **Pick** INSTANTANEOUS HOT WATER HEATERS



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Dan River Mills
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and many others.

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★ *No Storage Tank Required.* Pick Heaters are compact — can be installed in corners, on walls or overhead. Saves valuable floor space.

★ *Many Other Cost-Reducing Advantages.* Maintenance cost is remarkably low because Pick Heaters can be cleaned in a matter of minutes. Installation is simple and inexpensive . . . only ordinary pipe connections are required.

PICK MANUFACTURING CO.
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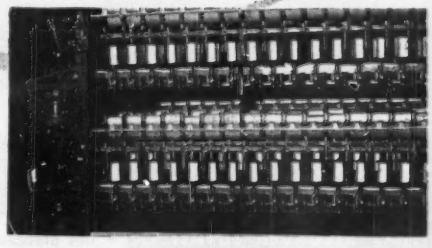
Standard on Twisters and Doublers since 1926



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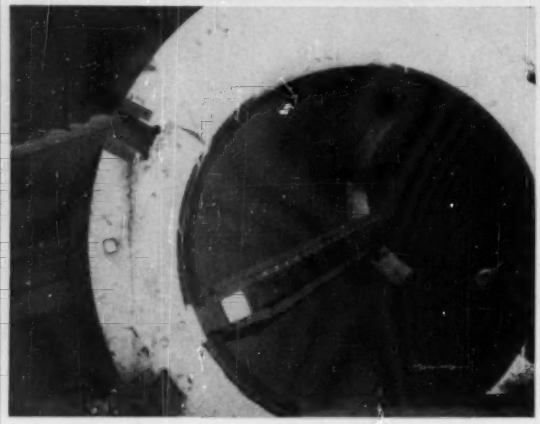

DIRECT HEAT FOR CYLINDER DRYING

▲ Red-Ray Burner inside cylinder provides heat for faster drying or curing.

Red-Ray Burners may also be applied directly to the exposed surface of the material.

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PRICE $55.

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HEAT-TIMER corporation
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quire no lubrication.

All the cast-off and landers, combination and cleaning burrs of the oil type on existing spring needle knitting machines may be replaced with this oilless type unit which is standard equipment on the new Precision high speed, multiple-feed spring needle knitting machine (see TEXTILE INDUSTRIES for January, 1955, page 144). However, it is necessary to equip existing machines with inexpensive special burr holders to be adapted to the old type machine.

Another advantage to be derived by using the ball bearing burrs is the fact that no oil collects on the machine surfaces inside the cylinder of the knitter; thus, lint is much more easily blown off, allowing much cleaner production.

It is expected that a ball bearing sinker or stitch burr will soon be available.

Precision Knitting Machine, Division of Central City Machine & Tool Co., Syracuse, N. Y.

Do you want more data? Write ◂ or use card, p. 205; list M-48

New Books

Industrial Purchasing—Buying for Industry and Budgetary Institutions was recently published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y. (price, $7.50). Authored by teachers of the subject and executives actively engaged in the field, the book covers not only the fundamental principles and policies, but also the broad details of current practice. Offers material on traffic, the purchase of scrap, the management of purchasing personnel. Divided into five parts, the first four of which cover the broad range of activities and responsibilities of the purchasing agent. In the fifth section is a survey of many of the basic industrial products with which most purchasing agents deal.

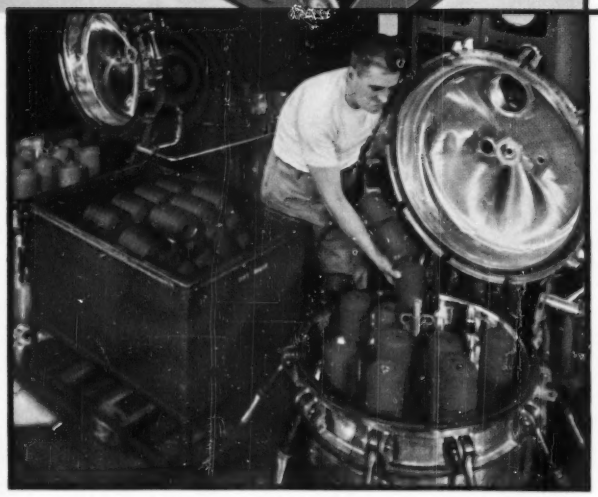
Representative of the effort being put forth by cotton producers to prevent gin damage to cotton is the recent publication by the Arkansas-Missouri Cotton Ginners' Association of a *Cotton Ginner's Handbook* which contains much information regarding the care and operation of ginning machinery and the preservation of lint quality. Textile mill personnel may find the sections which deal with cotton quality and its preservation of value. Copies are available from the Association at 1012 N. 6th St., Blytheville, Arkansas (price, $5.00).

A new publication, *Textile Calculations*, by N. C. Gee, deals with the calculations concerned in English and Metric yarn counting; yarn count conversions; yarn testing; warp, filling, and piece weights; resultant and average counts; blending, carding, spinning, weaving, and winding output; yarn costs; loom speeds and weaving output; cloth setting; cloth weights and conditioning problems. Published by The British-Continental Trade Press Ltd., 222, Strand, London WC2, England.

Just published was the 31st annual edition of the *AATCC's Technical Manual and Yearbook* which contains sections on AATCC organization, committee reports, AATCC test methods, bibliography, list of dyestuffs and textile chemical specialties, buyer's guide, and membership list. Copies may be obtained from Dr. Harold C. Chapin, Secretary, American Association of Textile Chemists & Colorists, Lowell Technological Institute, Lowell, Mass. Price, $6.00 per copy to non-members.

High Temperature

dyeing for yarns gives greater all-around fastness



Stock and piece dyeing of the newer hydrophobic fibers at 250°F. was developed successfully by Du Pont research working with a number of dyers. Now — a similar method for dyeing yarns of synthetic fibers has proved its value.

High-temperature dyeing has overcome fastness problems for many different types of yarn. The installation shown at left is operated at the American Thread Company. Increased rate of diffusion of dye into the fiber cuts dyeing time considerably, gives better fastness.

Developed and used so far only for synthetics, Du Pont is continuing research on applications of this method to other fibers. If you would like more complete information on high-temperature dyeing, contact your Du Pont representative or write to E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington, 98, Delaware. In Canada—Du Pont Company of Canada Limited, Montreal, P. Q.

Improved results with high-temperature yarn dyeing:

for **NYLON**—color is uniform through each layer of the package. Further, when chrome colors are used, chroming time and quantity of sodium dichromate are both cut, yet still give complete chromation and highest wet fastness.

for **"DACRON"***—need for a chemical carrier is eliminated, which cuts costs. Color buildup is excellent, giving deep, bright colors with no spotting or streaking, no loss of light fastness.

for **"ORLON"****—a complete range of shades is now possible for the first time. High-temperature dyeing is the only method that gets dye completely into filament "Orlon."

Du Pont Dyes

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BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

**Du Pont trademark for its polyester fiber **Du Pont trademark for its acrylic fiber*

FULL WIDTH SAMPLES FROM A FEW POUNDS OF YARN . . .

Produced by the Callaway SAMPLE & RESEARCH SLASHER

A Small Versatile Slasher
Particularly Designed for
SAMPLES
TESTING
PILOT PLANTS
and RESEARCH

This new all-electric Callaway Slasher is a complete and efficient slashing unit designed particularly to fit the slashing requirements of mills which must prepare a lot of samples. It is also ideally suited for research, testing and pilot plant operations.

Using a minimum amount of yarn—cotton, synthetic, silk, wool or worsted—direct from individual packages, without warping or beaming, this little slasher is proving it can save space and money in slashing samples . . . Full-width samples without tying up a production slasher—and from less yarn.

From the stainless steel size box through the four 8″ face electrically-heated drying cylinders to the head end, essential controls and adjustments are provided for all phases of operation. Speed can be regulated from five to forty yards per minute.

At reasonable initial cost and low operating expense, this new, versatile Slasher answers many small-run slashing problems.

We will be glad to furnish you with complete details without obligation.

WPF&M WARP PREPARATION MACHINERY
AIR-DRI SLASHERS
MULTI-CYLINDER SLASHERS
CYL-AIR SLASHERS
CALLAWAY SAMPLE SLASHERS
WPF&M HI-SPEED 4 CYLINDER SLASHERS
STANDARD 2 AND 3 CYLINDER SLASHERS

SLASHER MODERNIZATION EQUIPMENT
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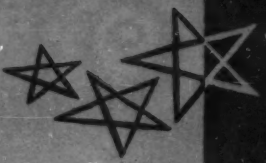
WEST POINT FOUNDRY & MACHINE CO.
WEST POINT, GEORGIA

Use this opportunity to keep abreast of new information dealing with machinery, equipment, supplies and services available to your mill.
To obtain more information on advertisements, print the name of the advertiser in the space provided on the card below.
Free booklets and more information on new equipment items may be had by entering their key numbers in the space designated for this use.
This service is made possible by the advertisers of TEXTILE INDUSTRIES as an aid to mill men who want to keep well informed on new developments in the industry. We cannot, however, extend this service to you unless you print or write legibly your name and position, the name of your firm, and its address on the card.
Four cards are provided in case others in your plant would like information . . . and TEXTILE INDUSTRIES pays the postman!



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HELPFUL BOOKLETS FREE!

12-1 Stock Gears. Bulletin by Ferguson Gear gives complete data on gears for cards, pickers, drawing, combers, compounds, motor pinions, roving frames. Write Ferguson Gear Co., Gastonia, N. C.

12-2 New Howell Motors. Booklet describes modern design of new series 100 Howell Motors. Features cooler running, smaller size and lighter motors. Write Howell Electric Motors Co., Howell, Mich.

12-3 Tension Control for Flat Knitting. Booklet describes Clentimack Company's automatic let-off which controls runner length within ¼ of 1% in flat knitting industry. Write Clentimack Company, 229 West St., North Attleboro, Mass.

12-4 Lining for Plain-Steel Vessels. Bulletin describes specially prepared formula developed for cement-lining water heaters and tanks. Prevents corrosion failures and is easy to apply on-the-job. Write Pocono Fabricators Div., Patterson-Kelly Co., Inc., East Stroudsburg, Pennsylvania.

12-5 Overhead Materials Handling. Booklet with photographs and drawings features a wide variety of installations and equipment details. All pertinent points of the Tramrail system are covered, including the subject of track peening. Write for booklet 2008-L, Cleveland Tramrail Division, Cleveland Crane and Engineering Co., Wickliffe, Ohio.

12-6 Modern Conveyors for handling textile loads. Actual textile case histories show savings, flexibility of modern handling. Catalog A-93-R, Richards-Wilcox Mfg. Co., Aurora, Illinois.

12-7 Air Power Devices. Booklet by Bellows describes various uses of their Air Motor, the only air cylinder with full electrical control, optional hydraulic control combined to make one positive safe and interlocked control system. Write The Bellows Company, Akron, Ohio.

12-8 Chemstrand—The Fiber Story. Excellent booklet describes the fabulous birth and growth of synthetics in the Textile Industry. Write Monsanto Chemical Co., St. Louis 4, Missouri.

12-9 Corrosion Resistant Valves. Bulletin describes and illustrates a number of Powell corrosion resistant valves and other engineering equipment for handling practically every corrosive fluid. Write William Powell Company, Cincinnati 22, Ohio.

12-10 Improved Moist-O-Graph. Bulletin describes improved Moist-O-Graph, featuring a redesigned circuit and fewer moving parts. Possibly applications in Textile Industry given. Write Minneapolis-Honeywell Regulator Co., Wayne and Windrim Avenues, Philadelphia 44, Pa.

12-11 Automatic Drive for Lift Trucks. Many advantages offered by automatic transmission for fork lift trucks are described in new booklet. Shows how improved materials handling may be achieved. Write Towmotor Corporation, 1226 E. 152nd St., Cleveland 10, Ohio.

12-12 Needle Feed Lockstitch Machine. New bulletin illustrates and describes the production advantage and application of Union Special's Needle Feed Lockstitch sewing machine. Write Union Special Machine Co., 400 N. Franklin St., Chicago 10, Ill.

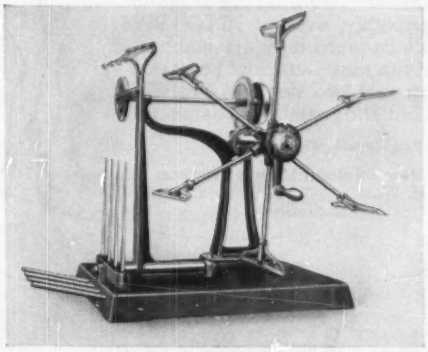
12-13—Measurement of Vibration. Booklet covers the meaning of vibration terms, description of vibration measuring instrument, procedures, examples, and interpretation of results. Write General Radio Company, 275 Massachusetts Ave., Cambridge 39, Mass.

12-14 Visual Tachometer. Booklet describes handy device for measuring speeds of inaccessible objects without contact. Acts on stroboscope principle, using spring-wound motor in conjunction to determine speed from a distance. Write Boulin Instrument Corporation, 65 Madison Avenue, New York 16, N. Y.

WHITIN YARN REELS *

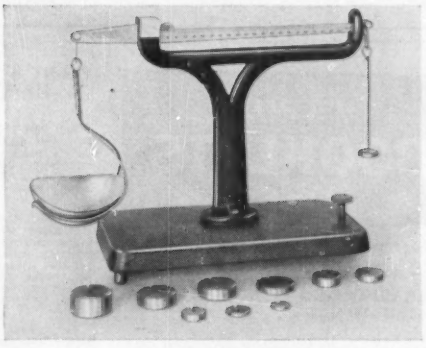
The Whitin Yarn Reel (No. 975) will reel accurately up to 120 yards of yarn with uniform tension from bobbins and is used in conjunction with roving scales or yarn testers to determine count, stretch, or strength of cotton, wool, worsted, linen, synthetic or other yarns.

The reel is available with either four or seven spindles and is 54" in circumference. A graduated dial indicates the number of yards reeled from each spindle. An automatic feed motion lays the yarn flat on the reel.



and

ROVING or YARN SCALES *



A precision scale (No. 980) for weighing roving yarn or samples of any material. Weights calibrated for each scale are available for weighing up to 1 lb. by tenths of grains. Scoop is made of Monel metal; beam and pea are dull chromium plated; weights are stainless steel and furnished in wooden case.

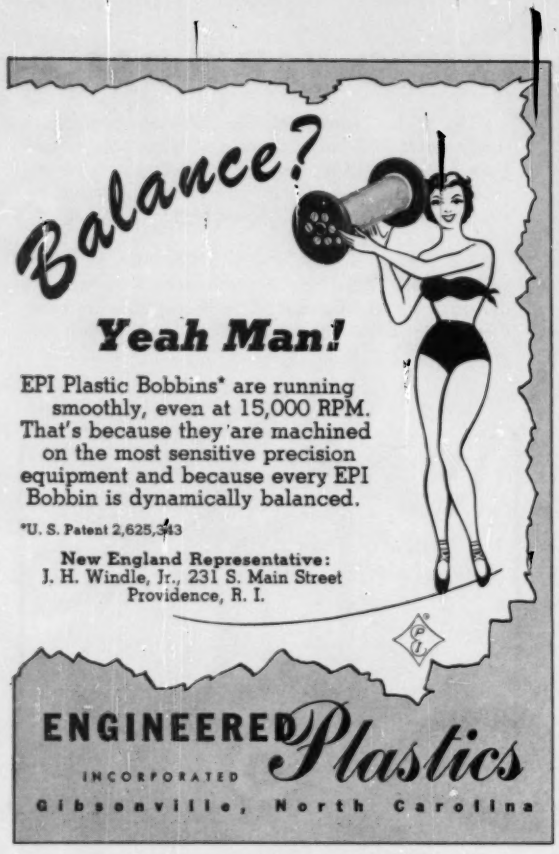
For weighing samples or small objects, a similar scale (No. 982) of 1 lb. capacity is available with weights calibrated in 10 thousandths of a pound, or in the metric system up to 500 grams by hundredths of a grain.

WHITIN

MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

* Formerly made by Browne & Sharpe Mfg. Co. Repair orders and queries should be addressed to Repair Department, Whitin Machine Works, Whitinsville, Mass.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Yeah Man!
EPI Plastic Bobbins* are running smoothly, even at 15,000 RPM. That's because they are machined on the most sensitive precision equipment and because every EPI Bobbin is dynamically balanced.
*U. S. Patent 2,625,343
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2. LIQUIDATION INFORMATION — Information available on how to profitably dispose of mill properties being liquidated. Tells how Comer will buy, sell and relocate industry in your former site. —COMER MACHINERY CO., 684 W. Peachtree St., Atlanta, Ga.

11. "WHERE DID THEY HIT PAY DIRT?"—Booklet describes how many manufacturing concerns have come South and why they found it profitable. Gives industrial advantages of the Southeast.—CENTRAL OF GEORGIA RAILWAY, Industrial Development Department, 501 Rhodes Haverty Bldg., Atlanta 3, Georgia.

15. NEW INDUSTRIAL FIBER—Technical bulletin now available on Fortisan-36, new industrial fiber by Celanese. Uses text, charts and diagrams to present technical properties, characteristics and recommendations for processing.—TEXTILE SALES DEPARTMENT, CELANESE CORPORATION, Charlotte, N. C.

17. A FAIR DAY'S PAY AND IN RETURN A FAIR DAY'S WORK—8-page booklet outlining the services offered to industry for the proper utilization of labor, material and equipment, and the resulting advantages for both labor and management.—AMERICAN ASSOCIATED CONSULTANTS, INC., 250 Park Ave., New York, N. Y.

22. THE WONALANCET WAY—Is the title of a editorial booklet published five times a year and deals with current problems which appear worthwhile at the time they are written.—WONALANCET COMPANY, 128 Burke St., Nashua, N. H.

PLANT & PLANT MAINTENANCE . . .

100. MOTION CONTROL WITH SILENTBLOC—Brochure describes advantages of General Tire Company's Silentbloc method of protecting delicate instruments, reducing machine vibration, etc.—THE GENERAL TIRE CO., Industrial Products Div., Akron, Ohio.

102. "TANK TALK"—Sixteen-page booklet of illustrations showing various types of elevated steel tanks constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said.—R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

103. HUMIDIFICATION, EVAPORATIVE COOLING—Bulletins available displaying AMCO automatic self-cleaning atomizers, controls, and evaporative cooling equipment.—AMERICAN MOISTENING CO., 260 W. Exchange St., Providence, R. I.

106. FINNELL COMBINATION SCRUBBER-VAC—Illustrated literature gives complete specifications and describes various methods of combination-machine-scrubbing, including method recommended for cleaning oily floors. — FINNELL SYSTEM, INC., 1300 East St., Elkhart, Indiana.

110. UNBRAKO STANDARDS — Catalogue by Standard Pressed Steel Co. describes in pictures and text the company's line of Unbrako precision threaded fasteners. Several applications of each product are indicated in line drawings to suggest hundreds of others and to stimulate the imagination of design engineers.—STANDARD PRESSED STEEL CO., Jenkintown, Pa.

111. CERTIFIED CLIMATE AIRCHANGER SYSTEM—Bulletin describes Certified Climate Airchanger System as used with direct humidification for partial or complete air conditioning.—PARKS-CRAMER CO., Fitchburg, Mass.

112. HARDWOOD FLOORING — Booklet entitled "Specialist in Manufacturing of Hard Maple Flooring for Textile Plants."—CONNOR LUMBER & LAND COMPANY, P. O. Box 810, Wausau, Wisconsin.

113. COTTON MILL EQUIPMENT — This book traces pictorially the steps in processing raw cotton into finished cloth. It shows the equipment needed for all phases of production, as well as containing a "Useful Information" section on Power Factor Correction, Lighting, Circuit Protection, etc.—WESTINGHOUSE ELECTRIC CORP., 511 Wood St., Pittsburgh 30, Pa.

114. PENETRATING WOOD FINISH — Bulletin gives applications, uses and application specifications of floor seals for textiles.—E. I. DU PONT DE NEMOURS & CO., INC., FINISHES DIVISION, Wilmington, Delaware.

115. FOAMGLAS—Illustrated brochure features information on how the use of Foamglas cellular glass insulation solved the severe insulating problems of leading users.—PITTSBURGH CORNING CORP., One Gateway Center, Pittsburgh 22, Pa.

116. STOP CORROSION—Details on speed Rex paint for metal wood and concrete maintenance solving condensation problems.—TRUSCON LABORATORIES, Box 69, Milwaukee Junction, P. O. Dept. T, Detroit 11, Mich.

117. CLEANING SYSTEMS — Booklet entitled "Certified Climate and Cleaning Systems" gives latest information on system. Products and uses fully discussed with two story layout of Certified Climate central station air conditioning system.—PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

119. FLEXLOC SELF-LOCKING NUTS—Drawings illustrate locking action. Fasteners are unaffected by temperatures up to 550 Fahrenheit and come in regular heights and thin-nut heights. Catalog contains complete information.—STANDARD PRESSED STEEL CO., Box 582, Jenkintown, Pa.

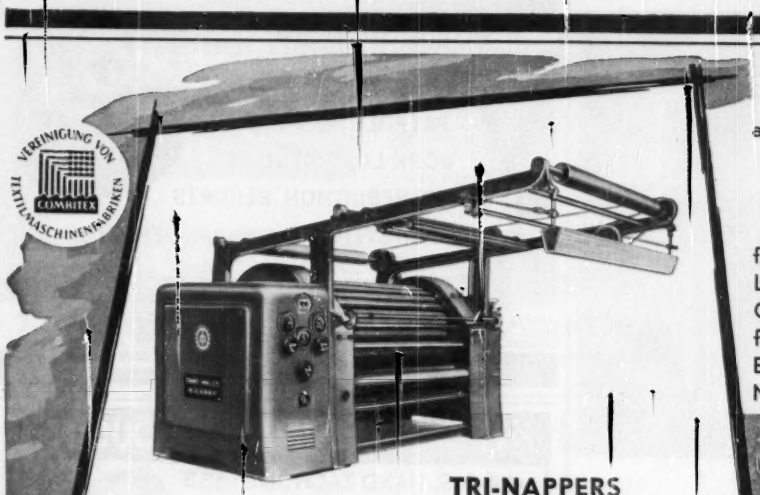
120. STAINLESS STEEL FOR TEXTILES—40-page booklet gives applications and advantages of stainless in textile plant equipment of all types.—ALLEGHENY LUDLUM STEEL CORP., Dept. TI-71, Oliver Bldg., Pittsburgh 22, Pa.

127. SOLENOID VALVES — Bulletin "V" lists size: from 1/2 inch to 3 inches; valves for normally open or closed service; stainless steel or Jenkins disc seats; three way solenoid valves, etc.; typical installations.—THE JOHNSON CORP., Three Rivers, Mich.

130. STAINLESS STEEL FABRICATION—Illustrated color booklet by Sims describes the advantages of stainless steel with regard to textile operations. Also includes information on ventilating and drying, slasher exhaust, and materials handling systems. —SIMS METAL WORKS, West Point, Ga.

131. "AIR PROCESSING"—Set of three bulletins showing real meaning of the term, where it can be used, the requirements for a successful system, etc.—J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

135. COLOR CONDITIONING—Booklet illustrated in color describes how Du Pont color conditioning puts color to work for you. Many ideas on safety brought out which color can aid.—E. I. DU PONT DE NEMOURS & CO., INC., FINISHES DIV., Wilmington 98, Delaware.



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138. METAL CONVEYOR BELTS—Recent catalog describes and illustrates Ashworth's entire range of manufacture, including the new Flat Wire Belt design and application, along with their Woven Wire constructions and Positive Drive Chain Edge belts.—ASHWORTH BROS., INC., METAL PRODUCTS DIV., Fall River, Mass.

146. FUNCTIONAL GLASS BLOCK DATA—Folder shows in detail daylighting function of Light-directing and Light-diffusing Functional Glass Blocks.—PITTSBURGH CORNING CORP., 307 4th Ave., Pittsburgh 22, Pa.

150. RIHCO HUMIDIFIERS AND COOLING SYSTEMS—Bulletin describes new atomizers with construction lessening air consumption in humidifier systems, evaporative cooling systems.—ALDRICH MACHINE WORKS, Greenwood, S. C.

151. INDUSTRIAL BRUSHES—Illustrated booklet of industrial brushes featuring textile usage on shears, printing machines—also flock, raising and cylinder brushes.—M. W. JENKINS SONS, INC., 444 Pompton Ave., Cedar Grove, N. J.

153. LAMINATED TEXTILE PLASTICS—Booklet by Synthane Corporation shows variety, application, and advantages of laminated plastic parts and supplies for the textile industry.—SYNTHANE CORPORATION, TEXTILE DIVISION, Oaks, Pa.

161. AUTOMATIC CLEANING EQUIPMENT — Complete booklet by American MonoRail shows working details and advantages of the Tri-Rail Cleaner, a great improvement over the original unit.—AMERICAN MONORAIL CO., 13107 Athens Ave., Cleveland 7, Ohio.

162. MODERN METHODS OF TEXTILE FLOOR MAINTENANCE—Illustrated treatise on the history of floor cleaning in textile plants and a detailed description of new methods for reducing floor cleaning costs as well as preserving textile mill floors.—G. H. TENNANT COMPANY, 2530 N. Second St., Minneapolis 11, Minn.

173. BLOWERS AND EXHAUSTERS — Bulletin No. 3014-D describes types "E" and "RE" electric blowers and exhausters. Uses and full description of each with detail drawings.—BUFFALO FORGE CO., 490 Broadway, Buffalo 5, N. Y.

174. PAINT STRIPPING BOOKLET — Illustrated booklet providing helpful data on latest materials and methods for simplified stripping of paint. Methods described include: (1) steam gun; (2) hot flow-on; (3) cold spray; and (4) tank immersion.—OAKITE PRODUCTS, INC., 22 Thames St., New York 6, N. Y.

176. STOKERS AND BOILERROOM EQUIPMENT—Information on boilerroom problems, improvements and apparatus.—McBURNEY STOKER CO., 2110 Peachtree Rd., Atlanta, Georgia.

181. AIR FILTRATION—Bulletin 234 describes and illustrates the Auto-Airmat, which is the automatic drytype air filter. Principle of operation, performance characteristics, construction and installation fully discussed.—AMERICAN AIR FILTER COMPANY, INC., 275 Central Ave., Louisville 8, Ky.

POWER TRANSMISSION, MOTORS, BELTING, LUBRICATION . . .

201. V-BELT DRIVE CATALOG — This handy, pocket-sized catalog helps you make quick and easy selections of any Dayton V-Belt Drive from 1 to 1000 HP. Contains many concise, accurate drive tables, diagrams, and other important engineering data.—DAYTON RUBBER CO., Dayton, Ohio.

203. TREADED LEATHER BELTING—This 16-page booklet describes Houghton's line of patented, specially treaded leather belting for all types of power transmission. Booklet includes valuable engineering and maintenance section.—E. F. HOUGHTON & CO., Philadelphia, Pa.

208. CUTLER-HAMMER MOTOR CONTROL — Booklets describe the combination starters for the textile industry, for roving frames and spinning frames, loom switch and Cutler-Hammer Motor control for textile cards.—CUTLER-HAMMER, 315 N. 12th St., Milwaukee, Wisconsin.

209. STEEL PULLEYS—Pictorial review of American Steel Pulleys, their manufacturing processes and some of their end uses. Textile pulleys are featured. —AMERICAN PULLEY CO., 4200 Wissahickon Ave., Philadelphia 29, Pa.

212. GATES TEXTILE ACCESSORIES — Handy pocket-size catalog BHM-7, fully illustrated, gives specifications of Gates textile accessories including pickers, lug straps, check straps, cone belts, evener belts, harness straps, take-up roll covering, and others.—THE GATES RUBBER COMPANY, 1001 Broadway, Denver 17, Colo.

213. LUBRICATION OF ELECTRIC MOTORS—Illustrated bulletin on lubricating and cleaning ball and roller bearings on electric motors.—NEW YORK & NEW JERSEY LUBRICANT COMPANY, 292 Madison Ave., New York 17, N. Y.

216. LUBRICATION CHART—Wall chart contains lubrication recommendations for many industrial needs. Chart covers applications such as hydraulic systems, spindles, air compressors, reduction gears, electric motors, oven conveyors and other general uses.—LINCOLN ENGINEERING CO., 5701 Natural Bridge Ave., St. Louis, Mo.

217. DYNAMIC RESPONSE D-C MOTORS—Illustrated bulletin describes the new Reliance Super 'T' Line D-c. Motors with Dynamic Response. Information is included on speed ranges, acceleration rates, enclosures, dimensions and selection data.—RELIANCE ELECTRIC & ENGINEERING CO., 1088 Ivanhoe Road, Cleveland 10, Ohio.

218. BALL BEARINGS FOR TEXTILE MACHINERY—A 40-page catalog illustrating Fafnir Ball Bearing units for replacement or new applications in all phases of textile processing.—THE FAFNIR BEARING CO., New Britain, Conn.

220. ELECTRICAL AND LUBRICATING DEVICES—Catalog contains complete and descriptive data on all Trico electrical and lubricating devices. Profusely illustrated, it contains list price information.—TRICO FUSE MFG. CO., North 5th at West Chambers, Milwaukee 12, Wisconsin.

222. AUTOMATIC PRODUCTION CONTROL—Booklet by Reeves Pulley Company, shows application of many automatic processes and controls to the textile industry. Well illustrated, it contains engineering data quite useful to anyone interested.—REEVES PULLEY COMPANY, Columbus, Indiana.

223. LUBRICATION OF BEARINGS—Booklet entitled "Lubrication and Maintenance of Ball and Roller Bearings" gives helpful list of do's and don'ts to prolong bearing life. Also includes valuable information on storage and handling of lubricants.—NEW YORK & NEW JERSEY LUBRICANT CO., 292 Madison Ave., New York 17, N. Y.

225. HYDRAULIC SLASHER DRIVES — Color booklet by Vickers shows how hydraulic drives provide an economical approach to improved slasher operation. Has detailed pictures and enumerates advantages.—VICKERS, INC., 1036 Peachtree St., Atlanta, Ga.

229. DODGE GENERAL POWER TRANSMISSION MACHINERY—Catalog describes various types of power transmission apparatus by Dodge. Gives specifications, sizes, applications, and prices. Very comprehensive.—DODGE MANUFACTURING CORP., Mishawaka, Indiana.

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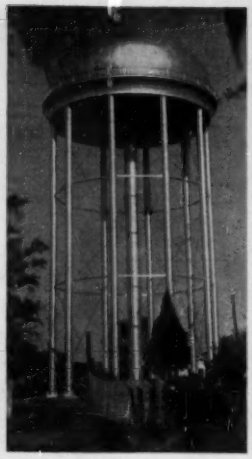

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238. TEXTILE LEATHERS CATALOG—Catalog by J. E. Rhoads & Sons gives characteristics and advantages of Rhoads "Tannate" leathers. Complete line is listed and described, and tips for correct installation. Copiously illustrated.—J. E. RHOADS & SONS, 2100 W. Eleventh St., Wilmington 99, Del.

240. CATALOG OF NEEDLE BEARINGS — New catalog conveniently presents design, application, and use data for five types of needle bearings. Actually an engineering short course on bearings with visual index units.—THE TORRINGTON CO., Torrington, Conn.

253. TEXTILE LUBRICATION—"Lubrication," a magazine published by the Texas Co. is available. Shows methods and means of lubricating chain drives in very comprehensive form.—THE TEXAS CO., 135 East 42nd St., New York 17, N. Y.

256. METERED LUBRICATION—Bulletin 6A has 12 illustrated pages showing how central lubricating systems are applied to combers, roving frames, winders, knitters, looms, etc.—BIJUR LUBRICATING CORP., Rochelle Park, N. J.

265. SERVICE PROCEDURE FOR BALL BEARINGS—A helpful manual for maintenance engineers giving helpful hints on disassembly, inspection, cleaning, lubrication, and replacement of ball bearings in any mechanism.—NEW DEPARTURE, DIVISION OF GENERAL MOTORS CORP., Bristol, Conn.

INSTRUMENTS, STEAM SPECIALTIES . . .

301. JOHNSON ROTARY PRESSURE JOINTS—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instruction, types, sizes, dimensions and prices.—THE JOHNSON CORP., Three Rivers, Mich.

302. TEXTILE INSTRUMENTATION—New booklet gives details on Brush Lapcheck, Brush Tension Analyzer, Brush Imperfection Counter, and Improved Uniformity Analyzer. Pictures uses and capacities of each machine discussed.—BRUSH ELECTRONICS CO., 3405 Perkins Avenue, Cleveland 14, Ohio.

304. WASTE HEAT RECOVERY—Color booklet describes Bready System of waste heat recovery from polluted or soiled waste water. Includes pictures and complete facts.—LUDELL MFG. CO., 5200 West State Street, Milwaukee, Wisconsin.

313. "THE FAIRBANKS VALVE COMPARISON CHART"—New reference manual important in specification, ordering, and using of bronze and iron-body valves.—THE FAIRBANKS COMPANY, 393 Lafayette Street, New York 3, N. Y.

321. RED-RAY BURNERS — Bulletin describing use of Red-Ray Burners in preheating and partial drying to increase capacity of frame.—RED-RAY MFG. CO., 445 W 45th St., New York, N. Y.

324. STROBOTAC — Informative reprint, "Strobotac Boosts Efficiency in Woolen and Synthetic Mills."—GENERAL RADIO CO., Cambridge 39, Mass.

337. COUNTING DEVICES — Catalog of Trumeter's complete line of counters for every application where counting, measuring or registering is required. Colored pictures illustrate each application.—TRUMETER COMPANY, 1265 Broadway, New York. 1, N. Y.

339. NEW LUBRICATED PLUG VALVES—Illustrated booklet by The William Powell Co. features a new line of semi-steel and steel lubricated plug valves. Advantages include quick and positive shut off.—THE WILLIAM POWELL COMPANY, 2525 Spring Grove Ave., Cincinnati 22, Ohio.

356. MAINTENANCE INFORMATION FOR YOUR SCOTT TESTER—Booklet containing maintenance data for calibration of Scott Testers, clamps for testers, gear-box lubrication, and recording.—SCOTT TESTERS, INC., Providence, R. I.

CARDING, SPINNING, WINDING . . .

401. LUMMUS DUSTLESS, STEEL BLENDING FEEDERS—Bulletin describing automatically closing, positively locking door on feeders to prevent overloading, choking.—ALDRICH MACHINE WORKS, Greenwood, S. C.

402. AUTOMATIC CLEANING AND OVERHEAD HANDLING FOR TEXTILE MILLS—24-page bulletin describing the American Monorail Automatic Cleaner for preventing accumulation of lint on spinning, twisting, winding and warping machines. Also for cleaning monitors and card room ceilings.—THE AMERICAN MONORAIL CO., Cleveland, Ohio.

403. TRAVELING CLEANERS—4-page bulletin describes the improved Parks-Cramer Frame and Room Cleaners including the Underframe and Floor Sweepers.—PARKS-CRAMER CO., Fitchburg, Mass.

404. LAPLESS ENDLESS SPINNER—Bulletin and full information will be supplied on lapless endless spinner and coning belting.—TON-TEX CORPORATION, 31 Columbus Ave., Englewood, N. J.

408. CARD GRINDING INFORMATION—Outlines care of grinders, instructions on speed to run grinders, amount of oil to add to machine and other pertinent information.—B. S. ROY & SON CO., Worcester, Mass., and Charlotte, N. C.

411. SHEET METAL WORK—Pamphlet describes spinning cylinders, aspirators, card screens, sheet metal specialties.—GASTONIA TEXTILE SHEET METAL WORKS, INC., 222 East Long Avenue, Gastonia, N. C.

412. SERVICE FOLDER—Folder covers textile metal products including spinning and twisting cylinders, card screens, etc.—JENKINS METAL SHOPS, INC., Gastonia, N. C.

413. HIGH SPEED, AUTOMATIC QUILLER—Color booklet by Schlafhorst describes the 'Autocoparer" Automatic Quiller. Gives advantages, space requirements, etc.—TERRELL MACHINE CO., INC., Charlotte, N. C.

414. WORSTED SPINNING—Bulletin explaining and illustrating Saco-Lowell's new system for worsted spinning, from top to yarn in five economical and efficient stages.—SACO-LOWELL SHOPS, 60 Batterymarch St., Boston 10, Mass.

415. DOUBLER-TWISTER FOR LARGE PACKAGES—Bulletin describing two new machines producing straight or tapered top bobbins. Suitable for filament or spun yarns up to three pound capacity. Individual thread stop motion fully discussed.—FLETCHER WORKS, INC., Philadelphia, Pa.

416. THE BRIEF SAGA OF THE RING TRAVELER—An interesting history relative to the ring traveler, which is in reality the basis of the spinning frame. John Thorpe's invention of ring traveler, the development of the spindle, and the invention of Rabeth's Bolster type spindle are covered.—NATIONAL RING TRAVELER CO., Pawtucket, R. I.

417. FEATHERTOUCH DRAFTING—Booklet describes in detail with pictures the most uniform drawing, the strongest drawing with the highest production per frame at the lowest cost.—IDEAL INDUSTRIES, INC., Bessemer City, N. C.

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419. TEXTILE APRONS—Illustrated folder showing the steps in manufacture of genuine leather aprons for all types of long draft spinning and card room machinery.—TEXTILE APRON COMPANY, East Point, Ga.

421. CARD ROLL COVERS — Brochure describing the Davis seamless roll covers. Lists advantages, specifications and offers free trial.—THE TEXTILE LABORATORIES, P. O. Box 1003, Gastonia, N. C.

422. WARPER BEAMS—Folder describes the high speed for rayon tire cord, cotton warper beams, cast aluminum end supports and large diameter heads.—U. S. BOBBIN & SHUTTLE CO., Lawrence, Mass.

423. SPINDLE OILING MACHINE — Information available on new Spindle Oiling Machine. Features include filter system to clean oil for reuse; smaller size for narrow aisles.—WICACO MACHINE CORP., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

424. GREASE-SEALED, ANTI-FRICTION ROLLS—Booklet contains description and engineering drawings of the Cole grease-sealed, anti-friction rolls. Also contains information on dual apron controlled drafting units.—COLE ENGINEERING CORP., P. O. Box 153, Columbus, Ga.

425. HANDY REFERENCE TABLES — Folder showing spinning traveler speeds, sizes of ring flanges, etc.—VICTOR RING TRAVELER CO., Providence, R. I., and Gastonia, N. C.

426. UNIRAIL UPTWISTER — Bulletin describes Universal Winding's headless package or bobbin take-up Unirail Uptwister which gives you higher yarn quality and better packages at faster speeds and lower costs, according ot the bulletin. Well illustrated with advantages discussed.—UNIVERSAL WINDING COMPANY, P. O. Box 1605, Providence, R. I.

429. BETTER FLYER AND SPINDLE EFFICIENCY—Entertaining booklet by Ideal Machine Shops gives facts about Flyers and Spindles which have helped many mills gain more efficient production, better yarn quality.—IDEAL MACHINE SHOPS, INC., Bessemer City, N. C.

431. TEXTILE VACUUM SYSTEM—Color bulletin by Spin Sa Vac describes application of their vacuum system to drawing, roving and spinning processes, and for the removal of broken ends, fly or sliver. Complete diagrams and shots of typical installations.—SPIN SA VAC CORPORATION, 1438 South Tryon St., Charlotte, N. C.

432. PRECISION TEXTILE WINDING — Bulletin on Kidde Tensions and Density Control for winding rubber cones.—WALTER KIDDE & CO., INC., Belleville, N. J.

435. DOUBLE DECK TWISTERS—Bulletin describes Jumbo (8 oz. to 16 oz. headless or take-up spool packages) and Acme (up to 10 oz. packages) models for high speed twisting of silk, rayon, nylon, etc., to finest deniers.—U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

438. HEADLESS PACKAGE TWISTER ELIMINATES REDRAWING—Literature shows high-speed Face Drive Twister for accurately building tapered or straight-end headless packages which go direct to quilling or warping without redrawing.—U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

439. PNEUMAFIL SUCTION CLEANING SYSTEMS—Booklet describes types of Pneumafil Systems, gives details of new Collector Unit model C-4. New type LFC Pneumafil is also discussed. Diagrams, comparison charts and installation pictures included.—PNEUMAFIL CORP., Charlotte 8, N. C.

444. OPENING AND CLEANING MACHINERY Color brochure by Dodenhoff describes their waste machine, enclosed feeder, conveyors and cleaner. Specifications included with pictures.—W. D. DODENHOFF CO., Box 178, Greenville, S. C.

445. ROLLER BEARING SPINDLES—Illustrated booklet showing various types of Marquette Roller Bearing Spindles. The unique full-floating footstep bearing is pictured in cut-away views, and its advantages are described.—THE MARQUETTE METAL PRODUCTS CO., 1145 Galewood Ave., Cleveland, Ohio.

447. CONE WINDER—Form A95 describes the Foster Model 102 winder which produces the Foster knitting cone for spun yarns, warping cones and tubes for dyeing and twister supply.—FOSTER MACHINE COMPANY, Westfield, Mass.

448. AUTOMATIC BLENDING SYSTEM—Dodenhoff system, called "Fiber Meter" is fully described in color booklet. Gives actual operating results, shows pictures and illustrates typical conversion of old fashioned systems.—W. D. DODENHOFF CO., 745 Lourdes Hill Road, Greenville, S. C.

449. NEW CONDENSER TAPE—Literature by Benjamin Booth describes newly introduced SUPR-O-TAPE, an impregnated fabric condenser tape. Shows actual sample of tape and gives complete prices.—BENJAMIN BOOTH CO., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

452. PNEUMAFIL LINT-FREE CREEL — Color booklet describes the new Airfoil Design Pneumafil type LFC with Built-in Lint-Free Creel. Gives complete details and pictures.—PNEUMAFIL CORPORATION, Charlotte 8, N. C.

453. EVENNESS TESTER—Folder explaining how this Tester takes the guess out of quality control and each processing step from carding through spinning.—USTER CORPORATION, Charlotte, N. C.

458. CONICAL RINGS AND FLYERS — Special data available on the Herr conical rings and flyers.—HERR MANUFACTURING CO., INC., 318 Franklin St., Buffalo 2, N. Y.

459. TENSION CONTROLS — Folder describing tension compensation and automatic tension controls. Three models—Standard, Warp, and Double Disc fully described with specific application.—WALTER KIDDE & CO., INC., Belleville 9, N. Y.

461. PRECISE WIND MACHINE—Form A-92 describes the Foster Model 75 widely used for winding straight or pineapple cones and tubes of rayon, nylon and other filament yarns.—FOSTER MACHINE COMPANY, Westfield, Mass.

462. TEXTILE MACHINERY PARTS CATALOG—A 24-page illustrated catalog describing the complete line of Dayco and Thorobred textile machinery parts including Cots, Aprons, Loop Pickers, Leg Straps, etc.—DAYTON RUBBER CO., Dayton, Ohio.

467. CARD CLOTHING — 8-page booklet by Benjamin Booth Company describes Strip-O-Matic Card Clothing and its advantages.—BENJAMIN BOOTH COMPANY, Allegheny Avenue & Janney St., Philadelphia, Pa.

469. SHORT CUT TO STAPLE FIBER SPINNING—Color brochure shows the ten steps in operation of the Turbo Tow Stapler, gives technical details and diagrams.—TURBO MACHINE COMPANY, Lansdale, Pa.

471. FACTS ABOUT YOUR FLYERS AND SPINDLES—Booklet by Ideal Machine Shops shows how smooth Flyer and Spindle operation can help produce higher and more efficient output, good quality yarn, minimum wear, and larger bobbins.—IDEAL MACHINE SHOPS, Bessemer City, N. C.

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472. TWISTING MACHINERY — Bulletin gives outstanding features, specifications facts and useful information on Novelty Yarn Twisters for Cotton, Silk, Worsted and Rayon Yarns.—COLLINS BROTHERS MACHINE COMPANY, 647 Roosevelt Ave., Pawtucket, Rhode Island.

474. BALL BEARING COMB BOXES—Southern State Equipment Corp. offers literature on their famous C-1 Ball Bearing Comb Boxes. Description, working principle, cut-away views shown.—SOUTHERN STATES EQUIPMENT CORP., Hampton, Ga.

475. TEXTILE ROLL COVERINGS AND MI' SUPPLIES—Color booklet by Armstrong shows and describes their complete line of textile roll coverings, including also loom supplies, mill supplies, roll covering for cotton, silk and synthetic and woolen and worsted systems. An excellent guide book.—ARMSTRONG CORK CO., Industrial Div., Lancaster, Pa.

476. TEXTILE FIBER OPENER FOR COTTON, SYNTHETICS, WOOL—New brochure by Cen-Tennial Cotton Gin Co. gives complete data on the Cen-Tennial Opener which incorporates improvements on the original SIRL Opener. Complete operating procedure is described.—CEN-TENNIAL COTTON GIN CO., Columbus, Ga.

478. TIPS ON CARDING PROCEDURE—Monthly bulletin by Ashworth Brothers includes many useful tips and advice on carding operation, maintenance and care and is available to anyone interested. Bulletin is a reprint of section appearing on green paper in this issue.—ASHWORTH BROTHERS, Fall River, Mass.

485. WEAVER'S KNOTTER — A catalog on the Boyce Weaver's Knotter giving a few instructions as to its use, recommendations as to the proper type knotter for the various types of yarns, and the spare parts that go to make up the knotter.—A. B. CARTER, INC., Gastonia, N. C.

WEAVING, SLASHING . . .

500. LUG SUPPORT HANGERS—Information now available from D & J Manufacturing Co. giving details, advantages and prices of their "Holdfast" lug support hangers.—D & J MANUFACTURING CO., P. O. Box 1281, Rome, Georgia.

501. LOOMS—An accordion type folder is available entitled "Unfolding to You the World's Largest Line of Looms." Information on all types fully discussed.—CROMPTON & KNOWLES LOOM WORKS, Worcester 1, Mass.

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504. LOOM SUPPLIES—Literature describing complete line of straps, strapping, pickers, dobby cords, sticks, binders, bumpers, brake lining and allied products.—E. H. JACOBS NORTHERN DIV., THE BULLARD CLARK CO., Danielson, Conn.

505. INNOVATION IN TEXTILE DRYING—Booklet by J. O. Ross gives details on Steam or Gas "Hot Air" Slasher for high speeds at low cost.—J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

506. SLASHING HINTS—A 20-page booklet offering helpful hints on warp sizing. Subjects: Size cooking equipment, section beam tension, sizing selvages, cooking, use of split rods, weighing for the mix, ti on cooking equipment, storage in kettles, etc.—SEYDEL-WOOLLEY & CO., 748 Rice St., N.W., Atlanta, Ga.

508. LOOM PRODUCTION CHARTS—Convenient celluloid card showing yards per loom per week of 40 hours at various loom speeds.—RALPH E. LOPER CO., Greenville, S. C.

510. CONTROLLED SIZING—Brochure in color describes the legend, operation and specification of the new Griffin Size Machine. Features most important basic improvements in size machines in many years.—IRA L. GRIFFIN & SONS, P. O. Box 1576, Charlotte, N. C.

511. ALUMINUM BEAMS—Catalog No. 1-21 describes Hayes magnesium and aluminum specialties for the textile industry. Illustrates this company's beams that are one-third the weight of conventional types.—HAYES INDUSTRIES, INC., Jackson, Mich.

514. THE STORY OF STARCHES—Semi-technical booklet tells the story of starches and information on how they are produced, the creation of new specialty starches, the unique "man-made" starch derivatives, and the handling of starches.—NATIONAL STARCH PRODUCTS, INC., 270 Madison Avenue, New York 16, New York.

515. WARPING, SLASHING, WEAVING ARNEL YARNS—8-page booklet preliminary information on Arnel Triacetate Yarns.—CELANESE CORP. OF AMERICA, TEXTILE DIVISION, Box 1414, Charlotte, N. C.

517. LOADING SYSTEM—Bulletin 417, on pneumatic loading system for Saco-Lowell slasher size box squeeze rolls, contains installation photo, features, specifications, and prices.—THE FOXBORO COMPANY, Foxboro, Mass.

521. STEEL WARP BEAMS—20-page Catalog No. 45 illustrating Standard and Special Purpose Warp Beams for the weaving industry, both broadloom and narrow fabrics. Also Textile Machinery Specialties.—MILTON MACHINE WORKS, INC., Milton, Pa.

530. ROTARY UNIONS—New catalog shows how to cut costs, get better sealing on can dryers, slashers, calenders, etc. Catalog No. 500 entitled "More Good Connections Count."—PERFECTING SERVICE COMPANY, Atando Ave., Charlotte, N. C.

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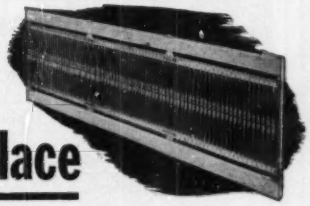

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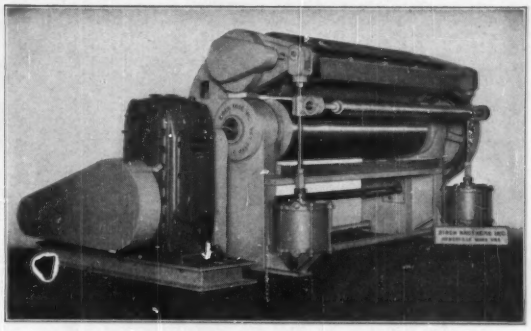

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621. "DYEING SYNTHETIC FIBERS"—Brochure giving a comprehensive, detailed analysis of the methods and materials available for dyeing synthetic fibers.—GENERAL DYESTUFF CO., 435 Hudson St., New York 14, N. Y.

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631. ELIMINATE DYE-BATH SHOCK—Data sheet by Foxboro shows how woven fabrics and hosiery may be protected from Crow's-feet, uneven shade, creasing caused by too rapid cooling of goods.—FOXBORO COMPANY, 487 Neponset Ave., Foxboro, Mass.

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639. ROTARY DYEING MACHINE—Booklet No. 425 illustrating the features of these stainless steel machines used for dyeing hosiery, hats, gloves, socks, etc.—SMITH, DRUM & CO., Allegheny Ave. at 5th St., Philadelphia 33, Pa.

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704. FUNDAMENTALS OF INDUSTRIAL WATER TREATMENT PROCESSES—24-page booklet entitled "If You Use Water" discusses the fundamentals of the three major classifications of industrial water treatment based on ion exchange: softening, dealkalization, and deionization.—ROHM & HAAS CO., RESINOUS PRODUCTS DIV., Washington Square, Philadelphia 5, Pa.

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714. NEW SODA ASH BULLETIN—64-page edition contains both new material and revisions of previously used data covering the subject.—SOLVAY SALES DIV., 40 Rector St., New York 6, N. Y.

715. AQUAROL AND ARKANSAS PRODUCTS—Bulletin on Aquarol water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and yarn, hosiery processing.—ARKANSAS CO., INC., Newark, N. J.

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720. INDUSTRIAL OIL—Bulletin catalogs all of Swift's Industrial Oil and Fatty Acid products. Included are detailed specifications, shipping information and suggested usage on products of animal, vegetable and marine sources.—SWIFT & COMPANY, INDUSTRIAL OIL DEPARTMENT, 1800 165th Street, Hammond, Indiana.

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723. CHEMICAL CATALOG—Features detergents, wetting agents, emulsifiers, brighteners, sequestrants, dyeing assistants with chemical composition, properties and application.—ANTARA CHEMICALS DIV., GENERAL ANILINE & FILM CORP., 435 Hudson St., New York 14, N. Y.

724. WICA CHEMICAL BULLETINS — Bulletins describe in technical terms the various Wica Products for textiles. Issued each month for the benefit of industry, they are an excellent help in wet processing. To get on the mailing list write—WICA CHEMICALS, INC., P. O. Box 506, Charlotte, N. C.

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733. WOOL OILS—Twin booklets by Proctor and Gamble tell of the influence of wool oils in producing quality yarns and fabrics, and of Proctor and Gamble's Proxol T, an outstanding wool oil.—PROCTOR & GAMBLE DIST. CO., Cincinnati, Ohio.

734. BLEACHING WITH PEROXYGEN CHEMICALS—Bleaching methods for cotton, rayon, nylon and animal fibers are comprehensively treated in Becco Research and Development Dept., Bulletin No. 52, now available.—BUFFALO ELECTRO-CHEMICAL CO., INC., Station B, Buffalo 7, New York.

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746. INDUSTRIAL CHEMICALS—24-page booklet listing alphabetically Harshaw industrial chemicals and applications.—THE HARSHAW CHEMICAL COMPANY, 1945 East 97th Street, Cleveland, Ohio.

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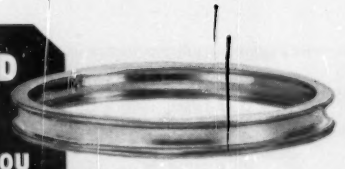

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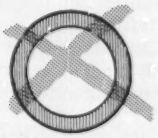

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818. FORGED HEAD ALUMINUM BEAMS—Bulletin 49-A shows new beam capable of holding high yardage of nylon and rubber warps, with specifications. Also describes permanent mold aluminum tricot and section beams.—MILTON MACHINE WORKS, INC., Milton, Pa.

828. THE KIDDE KNITTER—Bulletin describing this newest in Raschel-type warp knitting machines and higher production attained with it.—KIDDE MANUFACTURING CO., INC., Farrand St., Bloomfield, N. J.

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1008. CASTERS AND WHEELS — An illustrated booklet with complete specifications showing a complete assortment of Cotton Textile Casters.—THE COLSON CORP., Elyria, Ohio.

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1018. BALL BEARING TROLLEYS—20-page catalog by Link Belt describes entirely new line of ball bearing trolleys for overhead conveyors. Contains pictures, specifications, charts and diagrams.—LINK-BELT CO., 307 North Michigan Ave., Chicago 1, Ill.

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MISCELLANEOUS . . .

1102. BALING PRESSES—An illustrated folder describing this manufacturer's complete line of balers for all materials. Both Downstroke and Upstroke models.—ECONOMY BALER CO., Ann Arbor, Mich.

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1111. BRUSHES—A 26-page booklet is now available which describes and illustrates this manufacturer's line of brushes for the textile industry.—GASTONIA BRUSH COMPANY, Gastonia, N. C.

1112. THE RANDOM WEB PROCESS — Bulletin No. 101 describes the Rando-Webber and Rando-Feeder machines, and discusses the origin and development of the Random Web process which produces a non-oriented web suitable for processing into felts, wadding, heavy mats and non-woven fabrics on a continuous basis. Engineering data and cut-away diagrams.—CURLATOR CORPORATION, Textile Division, 565 Blossom Rd., Rochester, N. Y.

1113. MACHINE KNIVES! — Catalog and price sheets describing this company's line of knives for use on textile machinery.—TAYLOR-STILES & CO., 21 Bridge St., Riegelsville, N. J.

1115. TEXTILE WRAPPING MACHINES — Brochure describing automatic wrapping machines for various types of textile products, including the new Hayssen V-Type Underfold, most protective package made.—HAYSSEN MANUFACTURING CO., Sheboygan, Wisconsin.

1122. BALING PRESSES—Bulletins available describing this company's line of motor-driven and hydraulic baling presses for finished goods, textile fibers, wool, and waste of all kinds.—LOGEMANN BROTHERS CO., 3150 West Burleigh St., Milwaukee, Wis.

Personal NOTES

ABOUT MEN YOU KNOW

Succeeding the late James B. Tait as president of Rock River Woolen Mills, Janesville, Wis., is his son, **James B. Tait, Jr.,** who had been elected vice-president and assistant general manager last spring. **Alfred A. Guidotti** is the new vice-president and general manager.

On Sept. 1 **Mrs. Theresa Tharp** assumed her duties as community activities director at Lydia Mills in Clinton, S. C., where she is director of the kindergarten, the community building, and other projects.

At Anchor Rome (Ga.) Mills, Inc., **L. W. Robert, Jr.,** of Robert & Co. Associates in Atlanta, has been named chairman to succeed the late Paul A. Redmond. Re-elected president was **Paul A. Redmond, Jr.; L. H. Rice,** general manager, was named executive vice-president; **J. W. Cooper,** formerly secretary and treasurer, is now vice-president, treasurer, and a member of the board; and **Oscar Braden** is the newly named secretary and assistant treasurer.

James E. Mitchell, Jr., has been promoted to the position of quality control manager at Avondale Mills, to succeed **Gardner M. Hailes,** who resigned to become director of quality control at Rowe Manufacturing Co. Mr. Mitchell had been assistant to Mr. Hailes for the past three years.

Head of production control of Amerotron Corp., at Raeford, N. C., is **G. Glen Toole, Jr.,** who was formerly in the company's New York office.

V. K. Wilson, manager of the Statesville, N. C., plant of Peerless Hosiery Co., has been elected a vice-president of the firm's three North Carolina plants.

Named to succeed **E. J. Mack** as comptroller at Dan River Mills is **John W. Vanderwerff,** who has been assistant comptroller for the past four years.

J. Welch Harris, chairman of the board of Acclaim Hosiery Mills, Inc., is succeeded as president by **W. W. Sharp, Jr.,** formerly vice-president and treasurer. **Arris Covington** is now secretary and treasurer, and **W. D. Blanton** is vice-president in charge of sales.

Newly elected president of Wellington Sears Co. is **T. Scott Avary,** vice-president of West Point (Ga.) Manufacturing Co. Mr. Avary is also treasurer, a member of the board of directors, and a member of the executive committee of Wellington Sears which is a West Point subsidiary. He has assumed his duties in the company's New York offices. * * * **Everett H. Johnson,** vice-president in charge of coarse grey goods sales, has been elected senior vice-president in charge of all sales.

Claude Arnaud, formerly with Franklin Finishing Co., Paterson, N. J., is now general manager of Greenville Finishing Co., Greenville, R. I.

American Thread Co. has named **Norman Blackledge** as production manager for all of the company's southern mills. Mr. Blackledge, who was formerly assistant manager of the Sevier plant, is succeeded in that position by **R. M. Garrett.** * * * **W. D. Ward** has been promoted to card room overseer at the company's Newnan, Ga., mill to replace **L. N. Gregg,** who resigned to join the Georgia Rug Mill. **Richard Carroll** has been promoted from comber fixer to shift foreman in the card room at Newnan.

Stanley A. Black, vice-president and general manager of Aleo Manufacturing Co., is now general manager of Lowenstein mills in North Carolina.

At its annual meeting in Greensboro, the Carolina Yarn Association elected **Frank F. Causey** of American Thread Co. as president; **Charles Wolcott** of Leon Ferenbach Corp., vice-president; **James B. Anthony** of B. F. Goodrich Co., treasurer; and **Charles Donahue** of Duplan Corp., secretary.

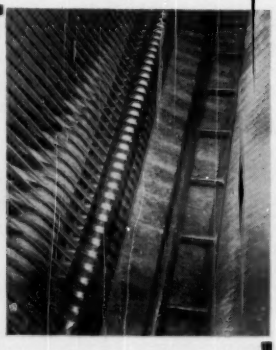
Edward S. Cobb, director of purchasing for Sidney Blumenthal & Co., Inc., has resigned. He had been with

BENJAMIN BOOTH COMPANY, the originators of STRIP-O-MATIC card clothing, manufacturers of a complete line of quality card clothing

ANNOUNCE

SUPR-O-TAPE

THE PROVEN FABRIC CONDENSER TAPE



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Gives Safe Positive Control

Instantly detects right or left hand twist

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Extremely Gentle new two-roll type safely handles most delicate to heaviest fabric

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Magical Black Light Ends Color Matching Rejects!

Here at last is a method that takes the guesswork out of color matching—and eliminates rejects. Under Blak-Ray light, even the slightest variations in color tones are visible. Result: yarn and fabric manufacturers—spinners, weavers, knitters, finishers, bleachers, printers and throwsters—are fast adopting the black light system.

Full details are given in new case History #111X, available free from the BLACK LIGHT CORPORATION OF AMERICA, Distributors for Ultra-Violet Products, Inc. **Denver:** 1334 Speer Blvd.; **Houston:** 4616 S. Main St.; **Los Angeles:** 5403 Santa Monica Blvd.; **New York:** 33-00 Northern Blvd. (L. I.); **San Francisco:** 925 Harrison St.; **Seattle:** 104 Prefontaine Pl. **Main Plant:** San Gabriel, Calif.

the company since 1924.

Arthur R. Coffin, Jr., is now superintendent of Ames Textile Corp., Lowell, Mass., succeeding **John W. Mason.**

Dwight Division of Cone Mills Corp. in Alabama City has announced the promotion of **Charles H. Moody** from

Mr. Moody

Mr. Curry

superintendent to local plant manager and **William T. Curry** from assistant superintendent to superintendent. * * * The company's new finishing plant at Carlisle, N. C., will be headed by **Marshall Gardner,** assistant vice-president, who will continue as head of the Greensboro, N. C., print works. Manager of the plant will be **R. R. King, III,** and **Gordie Boyd** will be production manager. * * * **Lelia Nell Masters,** editor of "The Textorian," a Cone Mills employee publication, has been named chairman of the American Association of Industrial Editors' committee on education.

James W. Corbett has been appointed office manager of the Dunean Plant of the Synthetics Division of J. P. Stevens & Co., Inc. **P. J. Acree,** who formerly held that position, has been transferred to the Slater (S. C.) Plant.

After 13 years with Durham (N. C.) Hosiery Mills, **W. W. Couch,** executive vice-president, has resigned.

Personnel recently transferred from Amerotron Corp.'s Anderson, S. C., office to Aberdeen, N. C., includes **R. M. Cushman,** executive vice-president in charge of manufacturing, and **Frank Gramelsbach,** industrial relations director. Others have been moved to Williamston, S. C., to close out Amerotron's operations at Anderson.

After serving as assistant purchasing agent of Textile Leather Division of General Tire and Rubber Co. since 1940, **D. A. Davis** has been promoted to purchasing agent. He succeeds the

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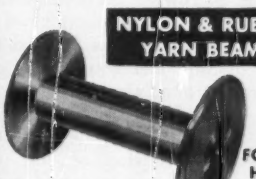
Light Metal featuring continuous welded construction

NYLON & RUBBER YARN BEAMS



FORGED HEADS RIGID BARRELS

Forged heat-treated aluminum alloy heads and extra heavy wall barrels designed to withstand extreme pressures of monofilament; fine denier; low-twist nylon; and rubber yarns. 13¾" and 21" diameter heads.

SECTION BEAMS

Adaptable to all makes of warpers. Cast aluminum alloy heads and extruded aluminum barrels cannot shrink, swell, splinter or distort.

STEEL BARREL

WARP BEAMS

for BROAD, NARROW FABRIC, RIBBON, VELVET AND CARPET LOOMS

BROADLOOM BEAMS

for C & K and Draper Looms

Shown above is Milton's stud construction (also made with cast iron hubs).

RIBBON LOOM BEAMS

Adjustable head with fixed shaft, or fixed head with removable shaft.

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Personal NOTES ABOUT MEN YOU KNOW

late Walter A. Schumacher.

Melva Davis, formerly with United States Finishing, is now the chemist at Danielson (Conn.) Finishing Co.

J. P. DeLoach, who began work for Callaway Mills Co. in 1933, has been promoted to second hand in the Hillcrest maintenance supply department. * * * **B. B. Towler** has been promoted to overseer of production at the Calumet Plant. He was second hand in production and shipping prior to his present appointment.

Executive head of the fabricating and styling division of the men's wear worsted department of Amerotron Corp. is **Norman Duberstein.** He had been associated with Herbert R. Leeds & Co. for the past 20 years, and was president of Leeds-Duberstein, Inc.

Acting in an advisory capacity to Munsingwear Inc.'s management is **W. Soren Egekvist,** who came to the company last August after serving as general manager of the lingerie division of Julius Kayser & Co. In his capacity of management consultant, Mr. Egekvist is studying marketing and manufacturing operations.

As the result of changes in supervisory personnel at Gastonia (N. C.) Weaving Co., **Warren Ramsey** has been promoted to superintendent; **Everett Merrill** has been moved up from second shift to first shift overseer, **Woodrow Stillwell** from third shift to second shift overseer, and **Jennings Harwell** has now become third shift overseer.

NEWLY ELECTED OFFICERS of the Northern North Carolina-Virginia Division of the Southern Textile Association (left to right): **Miles A. Carpenter** of Erwin Mills, Cooleemee, N. C., retiring chairman; **Cecil Squires** of Fieldcrest Mills, Leaksville, N. C., assistant secretary; **H. W. Buchanan** of Erlanger Mills, Inc., Lexington, N. C., vice-chairman; **Charles H. Ward** of Highland Cotton Mills, Inc., High Point, N. C., chairman; **Ralph C. Going** of Fieldcrest Mills, Draper, N. C., member of executive committee; and **Howard Barton** of Fieldcrest Mills, secretary.

Julius Green, who has been with Rose Mills, Inc., for the past 20 years, has been appointed vice-president. Mr. Green is in charge of sales to the knitted dress trade in the Metropolitan New York area.

Upon reaching the 25th anniversary of his chairmanship of the Piedmont Section of the AATCC, **Samuel L. Hayes** was presented a silver plate at the section's recent annual meeting in Charlotte.

The North Carolina Textile Manufacturers Association elected **Marion W. Heiss** of Cone Mills Corp., president, at their recent annual meeting in Pinehurst. **J. C. Roberts** of Textiles, Inc., is first vice-president; **Halbert M. Jones** of Waverly Mills, second vice-president; and **Hunter Marshall** of Charlotte is secretary-treasurer.

Replacing **Macon P. Miller** as director of industrial relations at Fieldcrest Mills, Inc., is **Edward J. Hoechst,** who assumed his duties in September. Mr. Hoechst formerly was vice-president and director of industrial relations for the Selby Shoe Company.

Newly elected president of the Association of Yarn Distributors at Philadelphia, Pa., is **Joseph J. Klumpp,** president of Joseph Klumpp Co. **Frank E. Slack** is executive vice-president; **T. Ewing Montgomery,** secretary; and **Charles S. Schell,** treasurer.

Frank Kenistion, formerly with American Woolen at Fairfield, Maine, is now night superintendent of The Williard Mill, Eastland, Maine.

Are You Getting a Fair Day's Work for a Fair Day's Pay?

As Production Engineers we specialize in the utilization of

LABOR—EQUIPMENT—MATERIAL

Our list of clients reads like the Blue Book of American Manufacture, and in our files are many expressions as to our service and results accomplished, like the following:

"We think highly of the work done by these men and recommend them without reservation."

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Chairman of the personnel division of the South Carolina Textile Manufacturers Association is **L. E. Drummond** of Seminole Mills, succeeding **N. E. Williams** of United States Rubber Co. New members of the executive committee of the division are: **Leslie Schildein** of Kendall Co.; **Jack Reames** of Abbeville Mills; **J. W. Greene** of Monarch Mills; and **Jack M. Fuller** of Woodside Mills.

Associate Prof. **Jacob K. Frederick, Jr.,** has been advanced to the status of full professor and appointed chairman of the division of textile manufacturing at Lowell Technological Institute; **Robert E. Morrison** has been appointed instructor in that division; and Prof. **Harry C. Brown** has been named chairman of the division of engineering.

Willfred W. Lufkin, Jr., formerly president of Wellington Sears Co., joined Celanese Corporation of America on Nov. 1 as vice-president and as president of its foreign trading subsidiaries. His headquarters are in New York City, but he plans to travel extensively throughout Europe, South America, and the Far East.

Recipient of Scotland County's first "Man of the Year" award was **Edwin Morgan,** president of Morgan Cotton Mills, Inc., Laurinburg, N. C.

A. B. Edge, Jr., of Callaway Mills Co., **B. W. Wharton** of Dixie Mills, Inc., **John P. Baum** of J. P. Stevens & Co., Inc., and **T. M. Forbes** of the Cotton Manufacturers Association of Georgia were elected president, vice-president, treasurer, and secretary, respectively, of the Textile Education Foundation, Inc., on the occasion of that organization's recent annual meeting held at the A. French Textile School of the Georgia Institute of Technology in Atlanta, Ga.

Richard Meader and **Allen Stackpole,** formerly overseer of weaving and second hand respectively at Goodall-Sanford, Sanford, Maine, are now in similar positions at the Carl-Maine Mills, Winthrop, Maine.

Raymond Medeiros, formerly overseer of weaving at Kalco Textile Co., New Bedford, Mass., is now superintendent of Cape Cod Weavers in that same city.

Elected president of The National Federation of Textiles, Inc., at its 82nd annual meeting was **Andrew J. Sokol,** director and vice-president of J. P. Stevens & Co., Inc. Vice-presi-

the big 4 in textile flake soaps

VIDOL ----------→ low titre

Puritan ----→ medium titre

EXCELSIOR --------→ high titre

pure green olive -----→ medium titre

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That clean lofty wool; those soft, perfectly fulled woolens and worsteds; clean, bright prints and vat and naphthol dyeings; completely degummed silks . . . all these can be yours with a Laurel Quality Soap.

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Laurel Quality Soaps are available in powder, bar, solid and paste (potash) forms. Ask for samples.

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Complete Range Fork Lifts
Chore Boys—Mules
Diesel, Gasoline, and LP Gas Models (for South Carolina)

Let our Engineers Show You How to Save Money in Your Mill

W. D. DODENHOFF CO.
INCORPORATED
GREENVILLE, SOUTH CAROLINA

Personal NOTES ABOUT MEN YOU KNOW

dents elected were: **Robert M. Schwarzenbach** of Schwarzenbach Huber Co.; **Jackson E. Spears** of Burlington Mills; **Donald B. Tansil** of M. Lowenstein & Sons, Inc.; and **Edmon G. Luke** of Amerotron Corp. * * * **Paul H. Hemmerich, Sr.,** of Duffy Silk Co. was elected chairman of the Federation's Throwsters Group; **George A. Fenton** of the Duplan Corp. was elected vice-chairman; and **Gilles A. Martin** of Martin Fabrics Corp. was named a member of the executive committee.

John J. Riley and **Milan L. Hatch** have been elected honorary members of The National Association of Cotton Manufacturers and the Northern Textile Association in recognition of their 37 years of outstanding service to the New England textile industry. Both men joined a predecessor group of mill treasurers, the Arkwright Club, in 1918 and became part of the NACM in 1931 when the two groups merged. They both retired from the NACM staff last March.

The Rhodhiss (N. C.) Division of Pacific Mills announced the retirement of **Luther A. Elmore,** who had been with the company since 1902, and **Hayden C. Cobb,** who had been with Rhodhiss since 1910. At the time of their retirement, Mr. Elmore was in the experimental department, and Mr. Cobb was purchasing agent.

John L. Mortimer has joined Burlington Mills at Greensboro, N. C., where he now has responsibility for

Mr. Mortimer

the automotive fabrics operations. Mr. Mortimer was formerly associated with the Massachusetts Mohair Plush Co., and before that with the Goodall-Sanford Co.

John Quinn is superintendent and colorist and **William Moreau** overseer of printing at the newly organized Fastex Printing & Dyeing Corp., Sterling, Conn. Manager **Bernard Golding** expects to have the plant in operation sometime this month.

Obituaries

A. J. Beauchamp, 73, formerly superintendent of Morowebb Mill and later connected with the Modena Mill, Gastonia, N. C.

H. B. Bradford, vice-president and general manager of American Moistening Co., Providence, R. I.

Louis E. Byer, 58, hosiery manufacturer and head of House of Byer, Inc., Franklin, N. H.

Henry G. Choquet, formerly president of Glenshire Mills, Inc., and Penargyl Mills, Inc.

Emil J. des Roches, 53, industrial relations manager for Pacific Mills Lawrence, Mass.

Harold S. Dickstein, 33, secretary of National Piece Dye Works, Inc., Long Island City, N. Y.

James B. Draper, 66, formerly head of James B. Draper & Son, Boston, Mass.

Ralph C. Edwards, 51, night superintendent of Exposition Cotton Mills Co., Atlanta, Ga.

Lewis Hinkle, 62, foreman at Bettersox Knitting Mills, Fort Atkinson, Wis.

William Hurtz, 55, superintendent of Monroe Silk Corp., Stroudsburg, Pa.

Henry L. Kahn, 74, president of Henry L. Kahn Co., Belvidere Hosiery Mills, Inc., and West Chester Hosiery Mills, Inc.

Murrell Arnold Land, 66, retired textile engineer for Westinghouse Electric Corp., Atlanta, Ga.

A. C. Marble, 88, board chairman of Curtis & Marble Co., Worcester, Mass.

Fred H. O'Hara, 70, board chairman, treasurer, and founder of Norwich (N. Y.) Mills, Inc.

Robert J. Stephenson, Jr., 56, executive vice-president of Southern Bleachery & Print Works, Greenville, S. C.

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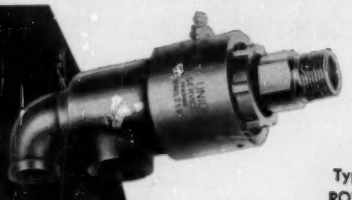

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SUPPLIERS News

WHAT THEY ARE DOING

Establishment of its third two-year graduate fellowship at the Institute of Textile Technology, Charlottesville, Va., has been announced by **American Cyanamid Co.** William R. Etchells of New Bedford, Mass., has been selected to study under this $5,000 grant for a course of studies leading to the M. S. degree in textile technology.

Neil J. Heaslip has joined **Textile Machine Works** as sales analyst in

Mr. Heaslip

the circular knitting machine section to give special attention to the new Reading CK-A circular knitting machine for the men's hosiery trade.

Crompton & Knowles Loom Works has purchased the Wrap-King Corp. of Holyoke, Mass., manufacturer of packaging machinery; and the Carl N. Beetle Plastics Corp. of Fall River, Mass., a fiberglass reinforced plastics manufacturing company. Each of the newly acquired companies will continue operation in its present plant as a wholly-owned subsidiary.

Paul G. Woodward of **American Viscose Corp.** has been named assistant to George L. Storm, vice-president and general manager of the rayon division. * * * Edwin L. Marston has been promoted to assistant manager of the New York district sales office.

Atomic Instrument Co. has acquired controlling interest in **Kaye Development Co., Inc.,** South Norwalk, Conn., maker of electronic color evaluation instruments and related detection devices.

Barry Controls Inc. announced promotions of Walter Fredrick to district manager for Canada and the eastern United States except New England, and Tom Black as district manager for the western part of the country and New England. William Reed has been appointed sales office manager.

William R. Heath has been elected executive vice-president of **Buffalo Forge Co.**

Carbide and Carbon Chemicals Co.'s newly appointed vice-president, D. B. Benedict, is responsible for all programs on synthetic fibers. * * * The company has opened a new sales office at 233 Saint Maurice Ave., New Orleans, La., headed by J. T. Fox.

Complete development laboratories are being established in Charlotte, N. C., at the marketing department of the textile division of **Celanese Corp. of America.** John W. Brooks, with headquarters there, is head of the entire textile marketing organization, including all regular yarn sales, industrial sales, and the sales of special non-apparel fiber products ranging from cigarette filters to non-woven battings. Under the new set-up the selling organization will be reinforced by special technical services designed to help textile mills solve problems in connection with synthetic fiber utilization. * * * Walter E. F. Mansfield has been named New England district manager for textile sales, replacing Bartlett Guild who has retired after 30 years with Celanese. Arthur V. Boyce is assistant to Mr. Mansfield.

Century Electric Co. has opened a new office at 831 North 19th St., Birmingham, Ala., under the direction of N. Cardella, to serve as a stock point of electric motors for customers throughout Alabama and parts of Tennessee and Florida.

Consos, Inc., has appointed Paul Bolen as technical and sales representative for the textile wet processing plants in Georgia, Alabama, and Tennessee.

Curlator Corporation has appointed Parrott and Ballentine Co., Greenville, S. C., as sales representative in the South. The sales territory

Tops for Cotton Tire Cord Paper

COLLINS Big Ring Twisters =

Collins Big Ring Twisters produce 4 to 12 lb. packages of exceptionally clean knotless yarns, when employing a 6 to 8 in. ring size.

High Speeds are possible because Collins Big Ring Twisters are equipped with large diameter pulleys, anti-friction idlers, ball bearing front roller stands, large diameter feed rolls, and roller bearing spindles.

Low Cost is achieved through increased twisting and winding efficiency. *Quality* is inherent in big packages of knotless yarns. Write for full information on Collins Big Ring Twisters and Collins convenient financing plan.

Big Packages Clean Knotless Yarn at Higher Speed ... Low Cost

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647 Roosevelt Ave., Pawtucket, R. I., Est. 1866

CHARLOTTE • CHICAGO • TORONTO

There is a Collins Twister for Every Ply Yarn Construction

SUPPLIERS News — WHAT THEY ARE DOING

includes Virginia, North and South Carolina, Georgia, Alabama, Tennessee, Arkansas, Mississippi, Kentucky, and Texas.

Commercial production of soda ash has started at **The Dow Chemical Co.'s** new $3,000,000 Texas Division plant at Freeport. Capacity is 300 tons daily. * * * The company has moved its Atlanta, Ga., sales office to 1714 Fulton National Bank Building.

Robert P. Young has been named manager of the New York district office of **Peerless Pump Division,** Food Machinery and Chemical Corp., succeeding F. W. McCann, who resigned.

Robert Gair Co., Inc., has renamed its two Los Angeles divisions. The Angelus Paper Box Co. Division is now the Los Angeles Carton Division, and the Angelus Corrugated Box Division is now the Los Angeles Corrugated Box Division. * * * O. R. Gibbons has been appointed assistant to Wray H. Callaghan, eastern folding carton sales manager; and Charles M. Hayes has been made assistant to C. A. Colbert, western folding carton sales manager.

Arnold E. Amadon, who was with **Graton & Knight Co.** from 1930 to 1947, has rejoined the company as

Mr. Amadon

supervisor of packings and textile sales. He replaces Leslie C. Street who has joined the Heald Machine Co. sales department.

The General Ultrasonics Co. has appointed Herbert A. Frankel as engineering and sales representative in the New York and New Jersey area for the application of the firm's ultrasonic processing equipment in the field of textile dyeing and bleaching. The company has established an office at 507 Fifth Ave., New York 17, N. Y.

Dr. Sidney Cohen has been named director of **The Hart Products Corp.'s** research and development laboratory, and Abraham S. Endler has joined its staff.

Now available from **Alfred Hofmann & Co.** of West New York, N. J., are the precision winding machines manufactured by George Sahm of Western Germany.

The Chemstrand Corporation recently announced plans for the formation of a British subsidiary. The company expects to manufacture its acrylic fiber in England within the next two years; in the meantime, Acrilan imported from Chemstrand's plant in the United States is available on the British market.

National Vulcanized Fibre Co. has formed an operating board responsible for all management policies of the company, with Eugene R. Perry, president, as chairman.

Mel Alpert has been appointed technical service representative for

Mr. Alpert

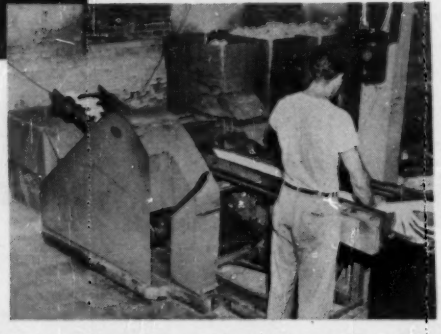
North American Rayon Corp. and **American Bemberg,** with headquarters at the company's New York sales office.

Harold E. Mongovan, Jr., has been appointed sales representative of the Organic Chemicals Division, **North American Cyanamid, Ltd.,** to represent the division's dyestuff department in Ontario and Western Canada, with headquarters in Toronto.

Monsanto Chemical Company's Inorganic Chemicals Division has appointed **Ralph S. Hood** of Marblehead, Mass., an independent sales representative for Syton and the machinery for the application of Syton to cotton fibers. Mr. Hood, who has been with Monsanto since 1930 and who was active in the research and

Cut Tow

Into 3/4" — 6" STAPLE LENGTHS



You can readily cut nylon, rayon and other synthetic or natural fiber tow, rove or sliver into uniform lengths on Taylor Stiles Staple Cutters.

The operation is continuous, the rate depending on the size of tow and the length of cut.

Staple lengths varying from 3/4" to 6" are produced on these machines. Changes in length are quickly made by means of a vari-speed motor, or by changing sprockets when variations in staple lengths are infrequent.

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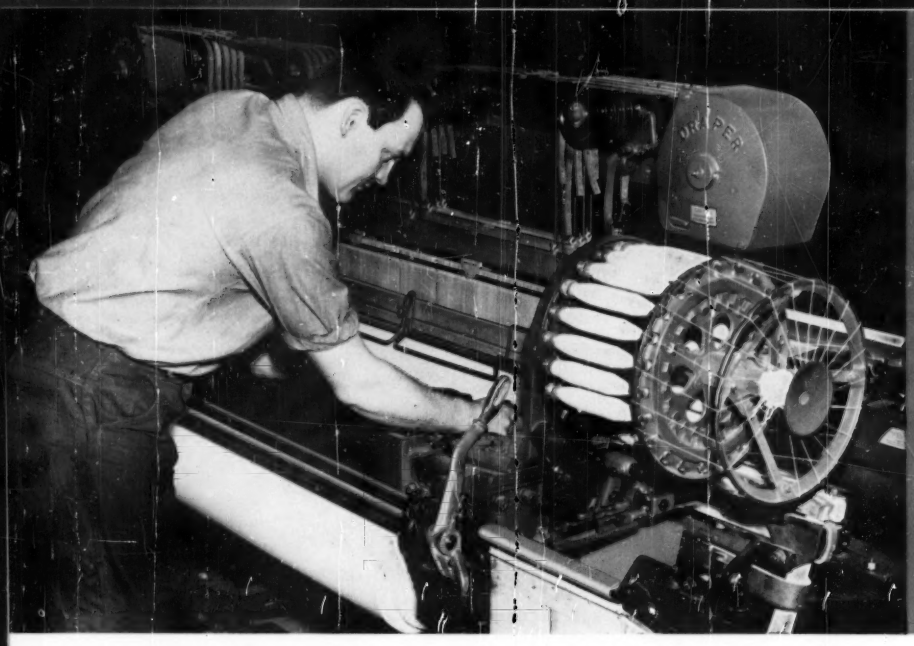


No. 6 of a Series

DRAPER LOOM FIXING

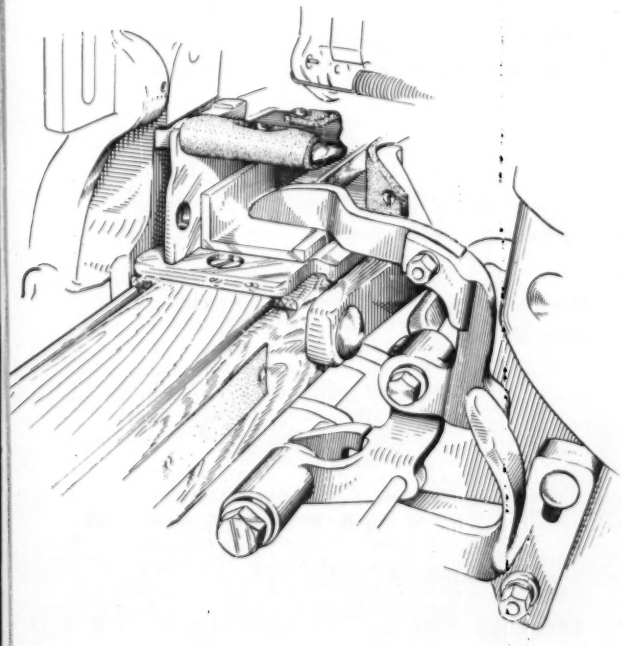
Use of Draper Gauges for Loom Settings

Top loom efficiency and weave room production can be achieved by establishing and adhering to a uniform system of settings for the various loom mechanisms.

Draper-recommended settings are offered to help you obtain maximum results from your Draper looms. However, these recommendations may be altered slightly to meet your own weaving conditions.

To obtain uniformity and accuracy of settings *it is important that you have the proper Gauges for your loom.*

When ordering Gauges from Draper, specify the loom order number and include, if possible, size of Shuttle and throw of Crank.



Several hundred Gauges are used in plant assembly of a loom which are of no direct value to a loom fixer. The following list is comprised of only those Gauges suitable for mill use on X series looms:

Pick Timing Gauge (Cam)
Pick Timing Gauge (Lay)
Filling Cam Follower Gauge
Back Box Plate Gauge
Lay Gauge
Lay Centering Gauge
Dagger Finger Gauge
Front Box Plate Gauge
Shuttle Feeler Gauge
Battery Height Gauge (Outside)
Battery Lining-up Gauge
Battery Height Gauge (Inside)
Battery End Gauge
Shuttle Feeler Locating Gauge
Center Fork Gauge

A similar group of gauges is available for E Model Looms. For description and use of Loom Gauges send for Draper Setting Instructions indicated below.

Shuttle Feeler Locating Gauge positions Shuttle Feeler above the Lay and away from the Back Box Plate.

DRAPER CORPORATION

Advertising Department (T16)
Hopedale, Massachusetts

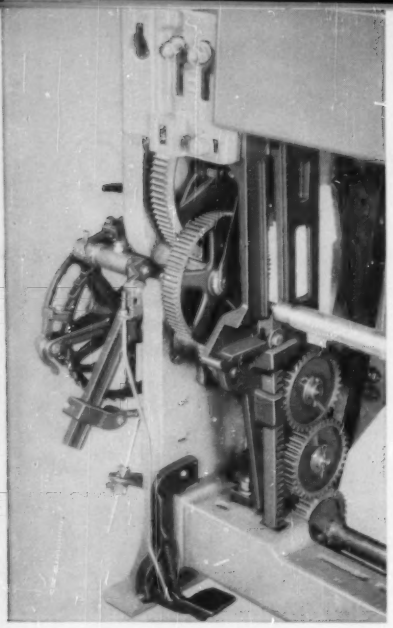
Please send information on Loom Gauges:
☐ Setting Instruction #555 for X Series Looms
☐ Setting Instruction #555A for E Model Looms

Name_____

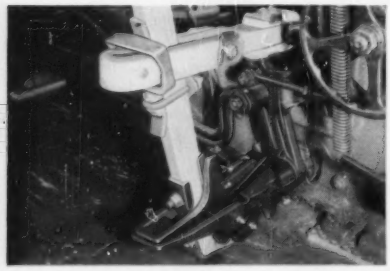
Position_____

Company_____

Address_____

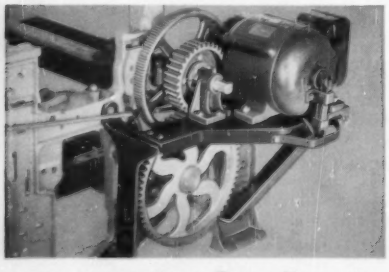


THE RATCHET TAKE-UP permits more accurate yarn control . . . makes it easier to match the pick.

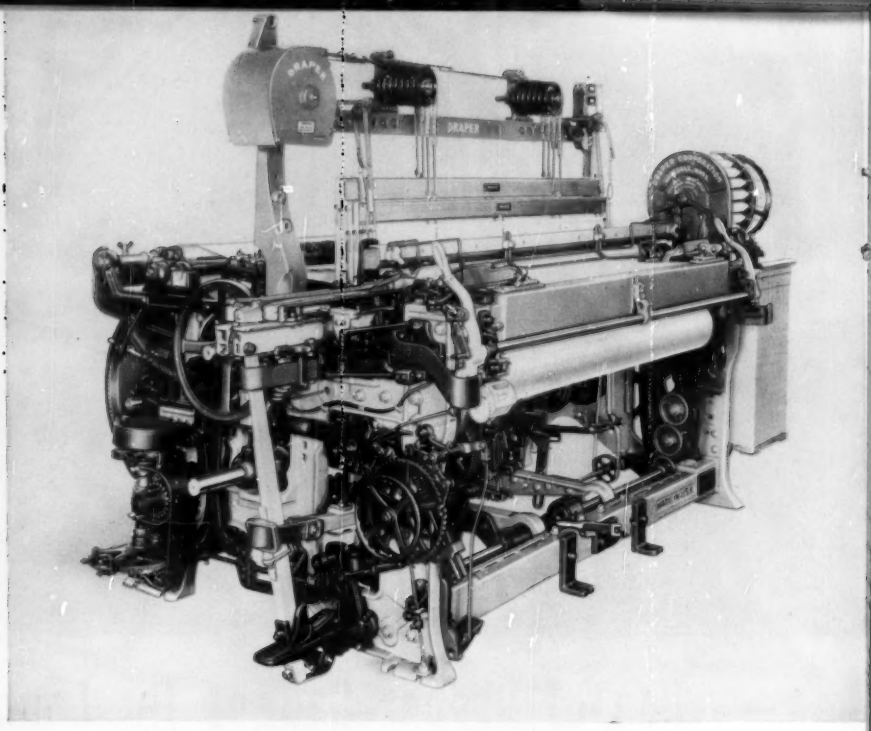


PIN AND SLEEVE TYPE PARALLEL provides a more positive, easier picking action . . . reduces wear on all component parts.

ONE-PIECE CAM, contour milled for more accurate pick-motion control.



THE DRAPER-DIEHL Power Transmitter . . . a compact power unit providing greater weaving efficiency with less maintenance.



DRAPER X2 HIGH SPEED AUTOMATIC LOOM

THERE'S A DIFFERENCE IN LOOM REPAIR PARTS AND MECHANISMS

. . . in over-all cost, application, service or loom performance. But, whatever the difference — *you* will benefit by using only repair parts or mechanisms that are manufactured by the original loom builder.

Draper repair parts or mechanisms *either duplicate exactly* or *improve* the original parts on your Draper looms. Increased production, lower maintenance and reduced costs are *big differences* which become evident when you use Draper repair parts.

For the best performance . . . use Draper repair parts exclusively on *your* Draper looms.

DRAPER CORPORATION

HOPEDALE, MASSACHUSETTS

ATLANTA, GA. GREENSBORO, N. C. SPARTANBURG, S. C.

development of the machinery for the application of Syton, has resigned from Monsanto to establish an independent sales agency for the promotion of Syton and the machines.

Alabama Polytechnic Institute's School of Textile Technology recently received from **Morton Machine Works** of Columbus, Ga., a Morton System package dyeing machine constructed of stainless steel and designed for use at temperatures up to

300 F. Shown here with the machine in the donor's plant are (left to right): Harry C. Jackson, president of Morton Machine Works; J. C. Farrow, professor of textile engineering at Auburn; and Cleveland L. Adams, director of Auburn's textile school.

Clarence B. Moss has established headquarters as manufacturers' agent in the Arcade Building, Elizabethton, Tenn. He continues to represent **Synthane Corp.**, whose southern district manager he has been for the past nine years, and in addition he now represents **Belding Corticelli** in the sale of stretch-type nylon yarns, combination knitting yarns, and all commission throwing done at the Belding Heminway plant at Morristown, Tenn.

After 28 years of association with **Onyx Oil & Chemical Co.**, Leon P. Brick has been elected executive vice-president and acting president of the company.

William Caldwell, president of **Wica Chemicals, Inc.**, has announced completion of his company's expansion program in the latex field. In addition to providing a production increase, new trucks were obtained to serve the entire South with Wica chemicals in the shortest possible time.

An expansion program in **General Aniline & Film Corp.'s** liquid detergent field includes: construction of a new surfactants manufacturing building at Calvert City, Ky.; installation of additional facilities at the Linden, N. J., plant; and leasing of large storage tank facilities in Los Angeles and Alameda, Calif.

R. E. Rogers has been appointed West Coast sales manager for **The Foxboro Co.**, with headquarters at the new branch factory in San Leandro, Calif. Other Foxboro personnel changes: E. W. Pitt is now Los Angeles branch manager; D. P. Thomas is branch manager at Shreveport, La.; M. F. Parr is regional engineer at San Leandro; C. E. Heegard is industrial engineer at Los Angeles; and C. J. DeVilbiss is industrial engineer at Shreveport.

Permacel Tape Corp. has appointed John E. Schuler as field manager for the southern division with headquarters in Charlotte, N. C. His territory includes North Carolina, South Carolina, and Tennessee.

Bernard Menin, who was formerly supervisor of textile application research for **E. F. Houghton & Co.**, is now assistant manager of the textile sales development department.

The **James Hunter Machine Co.** of North Adams, Mass., has purchased

SUPPLIERS News — WHAT THEY ARE DOING

the **Flex Spool Company**, Pittsfield, Mass., maker of aluminum textile spools and cloth rolls, through its subsidiary the Thomas Leyland Co., Inc., of Readville, Mass. Transfer of Flex Spool operations to the Thomas Leyland plant will take place immediately.

Sales representative for **Alfred Hofmann Needle Works, Inc.**, in western North Carolina, South Caro-

Mr. Graves

lina, and Georgia, is George C. Graves III, with headquarters at 1224 10th St., N. E., Hickory, N. C., where a stock of needles is maintained to

HOW ANDERSON SHIELDS INCREASE SPINNING ROOM EFFICIENCY

Spinning rooms using Anderson Shields save time and money, and prevent disruption when unnecessary breaking, chipping, and splitting of bobbins and spools is avoided. In a year's time these items alone can amount to a surprising sum . . . Insist on Anderson and get the best protection metal shields afford . . . Watch your spinning room efficiency increase!

TEXTILE SHIELD CO., INC.

Metal Protection for Wood Turnings

J. N. ANDERSON, *Treas.*

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SUPPLIERS News — WHAT THEY ARE DOING

expedite delivery to the firm's customers.

Merchandising manager for all Sterling Salt products of **International Salt Co.** is Clarence E. Sorg, Jr., with headquarters in Scranton, Pa. He was formerly assistant district manager in the company's Buffalo, N. Y., office.

On Oct. 1, 1955, Charles J. Palmer resigned as southern representative of **Meinhard & Co.**

Vice-president and general manager of the Brown Instruments Division, **Minneapolis - Honeywell Regulator Co.**, is C. L. Peterson, who had formerly been divisional vice-president.

Hale L. Dant is the new southern division manager for **Permacel Tape Corp.**, with headquarters in Atlanta, Ga.

McJunkin Corp. of Charleston, W. Va., has announced the opening of a sales office and warehouse in Louisville, Ky., at 1441 South 15th St., to better serve industry in that area with industrial supplies, tubular goods, corrosion resistant products, and custom fabricated equipment such as heat exchangers, pressure vessels, and related items.

R. E. L. Holt, Jr. & Associates, Inc., who recently moved into their new headquarters building at Greensboro, N. C., have also opened an office in the Lawyer's Building at Greenville,

Mr. Dunson

S. C. W. Brad Dunson is in charge of the new office which serves South Carolina, Georgia, and Alabama. Cecil A. McAbee of Decatur, Ga., covers the Georgia-Alabama territory.

The **Saco-Lowell Shops** have licensed the firm of J. & T. Boyd, Ltd., of Glasgow, Scotland, to manufacture and sell Saco-Lowell worsted roving and spinning machines in the British Commonwealth.

B. G. Stumberg, Jr., has joined the **Southern Sizing Co.** at East Point, Ga., as technical sales representative in

Mr. Stumberg

the southeastern states. He was formerly assistant superintendent at Huntsville (Ala.) Manufacturing Co.

David Brinton, sales manager of Brinton Fabric Machine Division of **Scott & Williams, Inc.**, has established permanent headquarters in the company's New York office. Mr.

The Better the Beam . . . the Better the Warp

. . . Better Balance

Customers report these section beams, made of high strength aluminum alloys with eighteen ribs for maximum rigidity and durability, continue to run true after repeated warping and shipping cycles.

Heavy gauge steel tires are giving exceptionally trouble-free service, and our patented method of head mounting assures freedom from trapped yarn and economical replacement of all components.

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The SIMCO "Midget" Static Eliminator is *guaranteed* to be the most effective, yet least expensive available for all textile machinery! Write for information.

the SIMCO company
920 Walnut St., Lansdale, Pa.

Brinton was vice-president and secretary of Brinton Machine Co. until the acquisition of its knitting machine assets by Scott & Williams.

Pictured here looking over a new Tube-Tex extractor pad which was given to the School of Textiles at North Carolina State College by the **Tubular Textile Machinery Corp.** are

(left to right): Prof. W. E. Shinn, head of the knitting department of the college's School of Textiles; Prof. Kenneth S. Campbell, professor of textile chemistry at the college; and Lee Rothenberg, Jr., of Tube-Tex.

Joseph H. Sutherland has been elected to the board of directors of the **United States Testing Co.** Mr. Sutherland is vice-chairman of the board of directors of J. P. Stevens & Co., and he is a director of the Marion Manufacturing Co. and the Lawrence Manufacturing Co.

Square D Co. has formed an English subsidiary—Square D Limited, 100 Aldersgate St., London—to manufacture and market its electrical distribution and control products in the British Isles and Europe.

Edward C. Parish, Jr., who has previously represented the **Universal Winding Co.** in New England, has been named assistant sales manager of the twisting machinery division. J. Bertram Howarth succeeds him in the New England territory.

H. F. Livermore Corp. has appointed Fred T. Harvell as salesman

Mr. Harvell

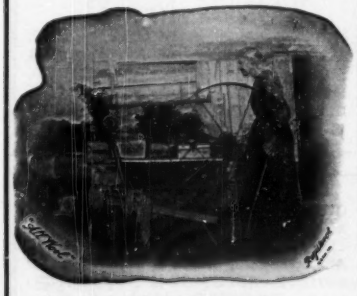
to cover a portion of its southern territory, which takes in part of North Carolina and all of Virginia.

Marvin M. McCall has been elected vice-president and appointed acting general manager of **American Moistening Co.**, an affiliate of Grinnell Co., Inc. His headquarters are at the company's new plant at Cleveland, N. C.

At a meeting of the board of directors of the **American Paper Tube Company** in October, the resignation of Harold L. Amrhein as president, treasurer, and director was accepted. The board elected Robert J. Guerin as president and treasurer; Edmond H. Guerin, Jr., as vice-president, assistant secretary, and assistant treasurer; and Robert E. Jacobson, secretary.

Lane L. Bonner, Jr., has joined the Polychemicals Division of **West Virginia Pulp and Paper Co.**, which manufactures and markets pine wood lignin and its derivatives to be used as surfactants, sequestrants, etc.

EDWARD H. BEST & CO.
Est. 1888 Inc. 1901



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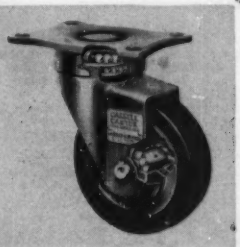

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Textile Engineers experienced in nylon or synthetic fiber production to work as production engineers in manufacture of nylon; Polymer Chemists in Development and Research Field; also technical personnel experienced in yarn finishes, and technical personnel experienced in extrusion of nylon plastic products may apply for these permanent positions offering excellent future at Virginia's newest synthetic fiber plant (Nylon) by personal visit without further appointment or by resume to P. O. Box 831, Hopewell, Virginia. Plant location is one mile north of Hopewell, Virginia, off State Route 10.

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We buy and sell good used Quills, Slubber and Twister bobbins. Tell us what you need or what surplus bobbins you have for sale.

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60 - Whitin FW-3 Spinning Frames 200 spindles each—4½ gauge—3" Rings Complete in every detail. Built 1951 —Condition excellent.

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Purchasing Department
1407 Broadway
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Automation

(Continued from page 165)

require to service automatic machines and the more people will be needed to design and build them. The telephone companies used to hire huge quantities of girls to operate rather simple switchboards. Now these operators are gone, but apparently a larger army of skilled workmen must be kept to service the automatic equipment which replaced the manual operators.

All kinds of fantastic imaginings have been built around the social implications of a more completely automatic age, and many persons think that automation automatically leads to bigger and bigger corporations, and bigger and more rapacious labor rackets. This, however, may not necessarily be the case.

The lawyer or druggist or office manager with a mechanical bent might buy an automatic machine and put it in his basement or in his garage, and stoke it up with raw materials in the morning, and happily ship his finished parts to some assembly plant when he got back from his regular treadmill in the evening. During the late war, the "Bits and Pieces" Program in England was what kept the country going. When a big plant was bombed out, the work would be farmed to hundreds of small suppliers, some of whom perhaps only owned one drill press or one lathe.

Perhaps in an age of almost complete automation there will be assembly plants putting together all kinds of things made from elements produced in such automatic workshops as the one just suggested. This might be one natural way of curbing the rapacity of the labor rackets and breaking up the ironclad monopolies they now hold over the manufacture of so many things.

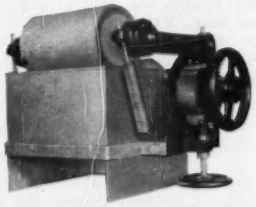
Maybe in time the industrial cycle will come full circle, and the home industries will get back to where they were 200 years ago, and one man in a community will take care of the automatic machine that grinds out all of the towels for the area, while somebody else will look after the machine which automatically makes shoes, and so on, through a great variety of necessities.

Under the present policies of the big labor rackets, whereby wages are to be increased about 10 to 15 per cent a year every year indefinitely, it will in time cost too much to make anything in a factory except these automatic machines, and it will certainly cost too much to ship anything bulky from one place to another.

At one stage of automation about 25 or 30 years ago, hundreds of thousands of householders operated homemade breweries, and some even had homemade stills. This shows how ingenious the American people are in providing for themselves something which is difficult to get otherwise. We are already well into the "Do it Yourself" Era, and there is no telling how far this movement can go.

We are strongly in favor of more automation. It has worked miracles for us so far, and we are not the least bit concerned about the supposed perils implicit in its further miracles.

Adjustable Tension Squeezer



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Easily adjusts tension with hand wheel

Excellently works as cloth pull by replacing brake with sheave and motor

Stainless Steel splash guard and pot-eye cloth guide

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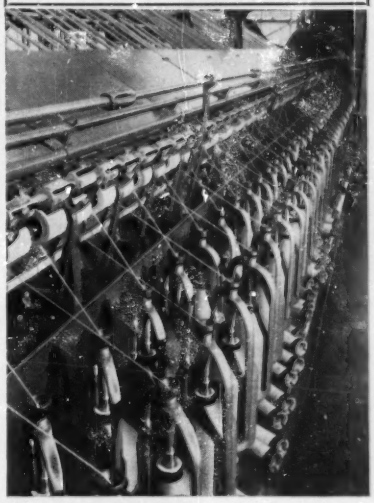

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TWIST CONDENSERS ROVING PRETWISTERS*

The two design HALO TWIST CONDENSER gives maximum pretwisting and uniformity of twist on all flyers. One design fits on the front flyers and one fits on the back.

Condensers fit snugly on the flyer and are made of synthetic rubber so as not to be affected by oils on fibers.

In extensive tests actually in the mills, it has been proved that the HALO TWIST CONDENSER effects the following conditions: less ends down, less waste, heavier bobbins, more uniform yarn, up to 20% higher production, and lower costs.

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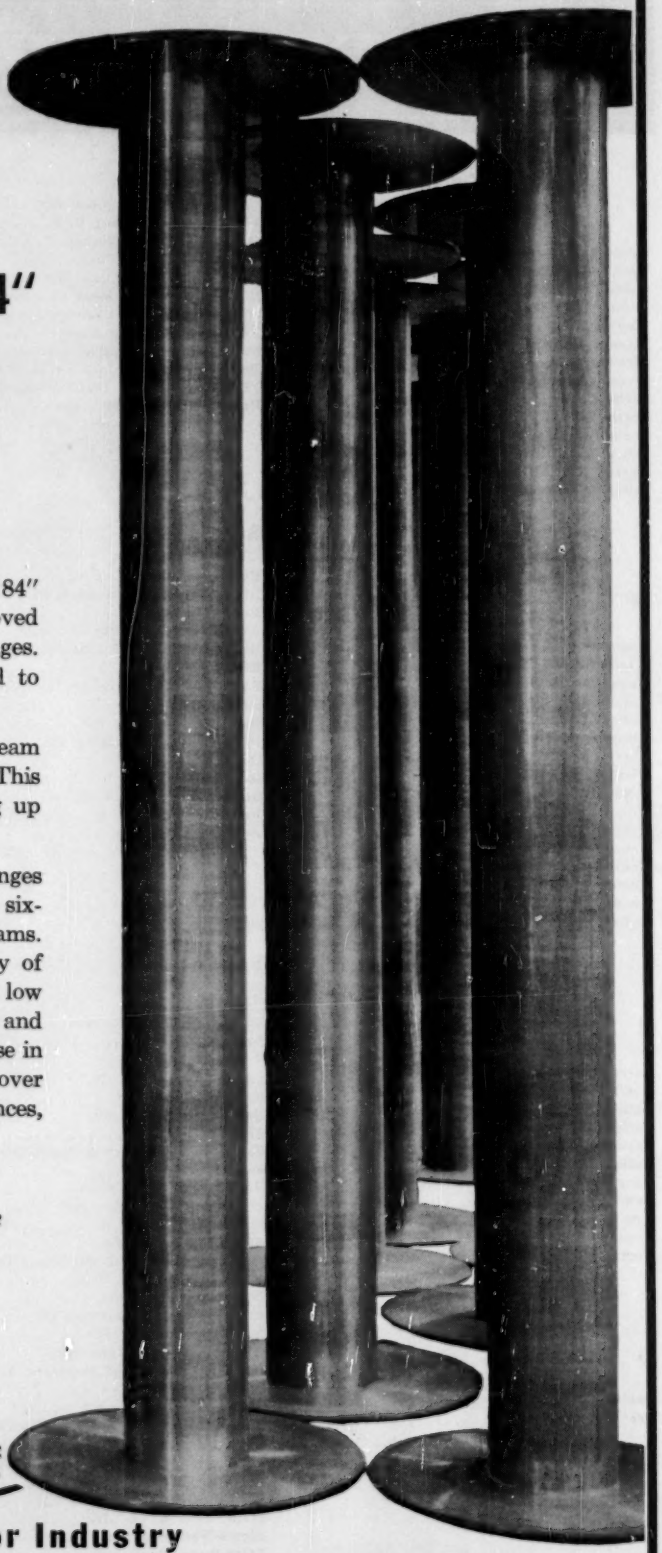
New Celanese 21"x 84" Beams offer definite advantage to tricot knitting trade



Trial shipments of knitting sets on 21" x 84" beams indicate simplified handling, improved quality and increased production advantages. The 84" beams will shortly be offered to the trade.

Simplified Handling: The bigger beam means fewer beams to handle per set. This results in easier loading and threading up of machines.

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For further information, write Celanese Corporation of America, Textile Division, Charlotte, North Carolina.

*Reg. U. S. Pat. Off.

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Fibers for Industry

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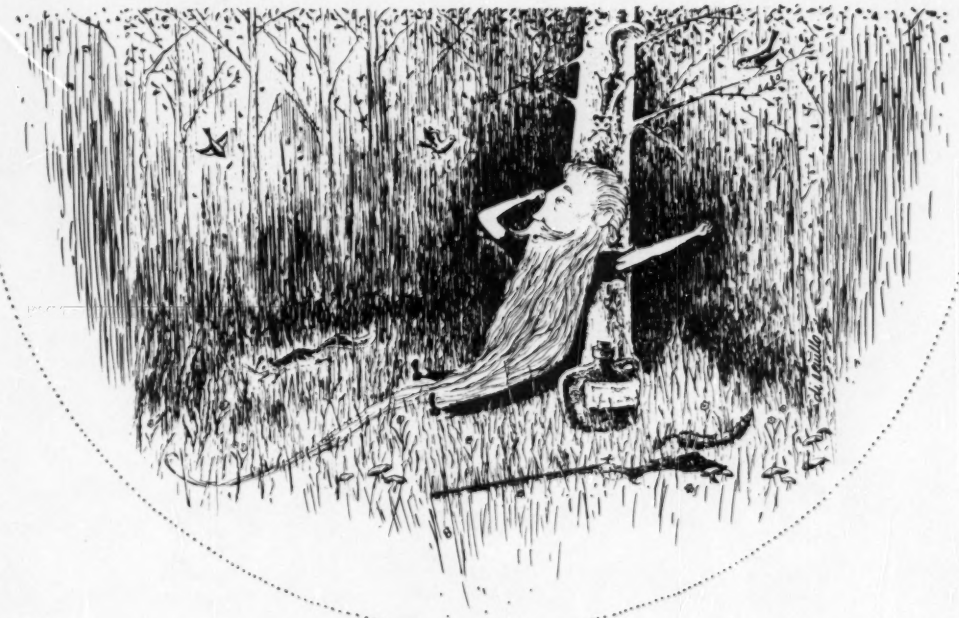

Rip Van Winkle took time out to nap . . . and woke up twenty years later! His musket had rusted beyond use. His wife had long since gone her separate way. The world he'd lived in no longer had a place for him.

Rip was obsolete.

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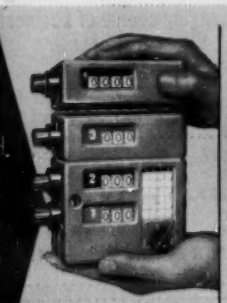
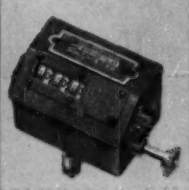


2-3-4 Convertible Counters for looms, frames, knitting machines, etc.



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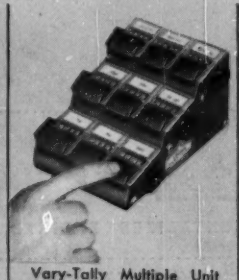

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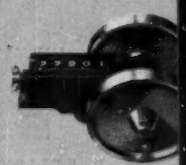

Double-Wheel Linear Counter for indicating lengths in feet, yards, e